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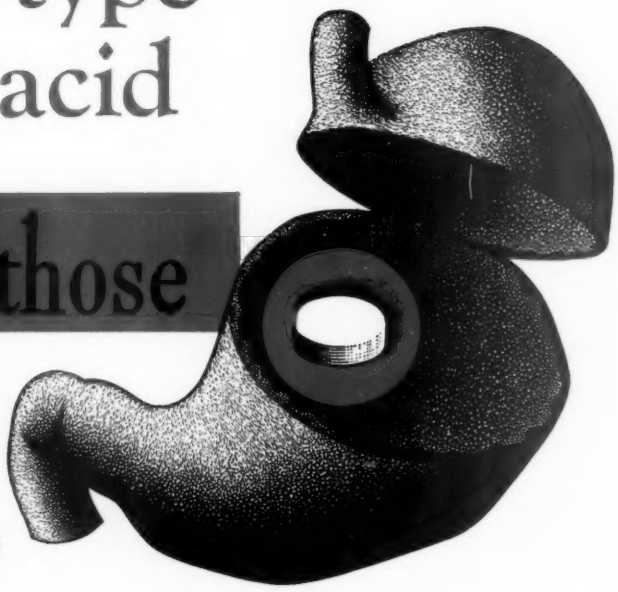

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1. Brick, I.B.: Amer. J. Dig. Dis., *In Press* 2. Bralow, Spellberg & Necheles: Scientific Exhibit #1112, A.M.A. Annual Session 1949

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*Eastman, N. J. & Seibels, R. E.: *The Efficacy of the Suppository and of Jelly Alone as Contraceptive Agents,* J. A. M. A. **139**:16 (Jan. 1) 1949. **Reprint on request.**

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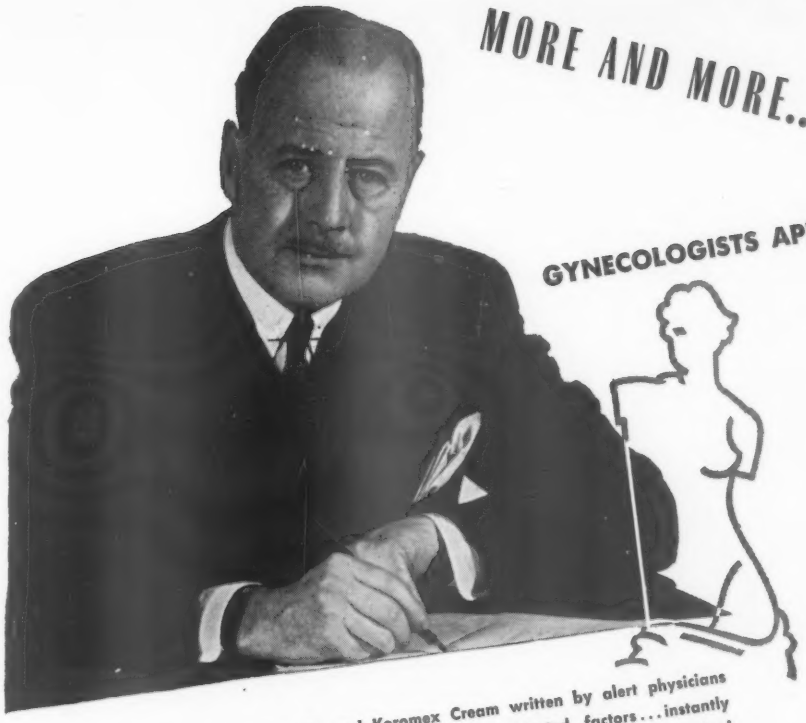

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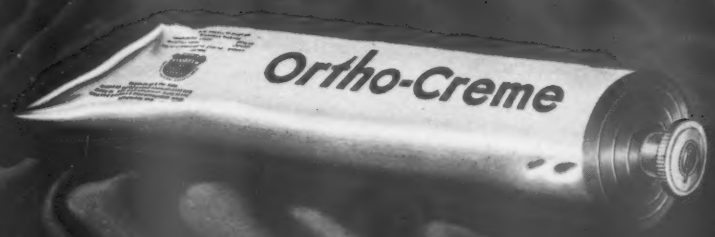

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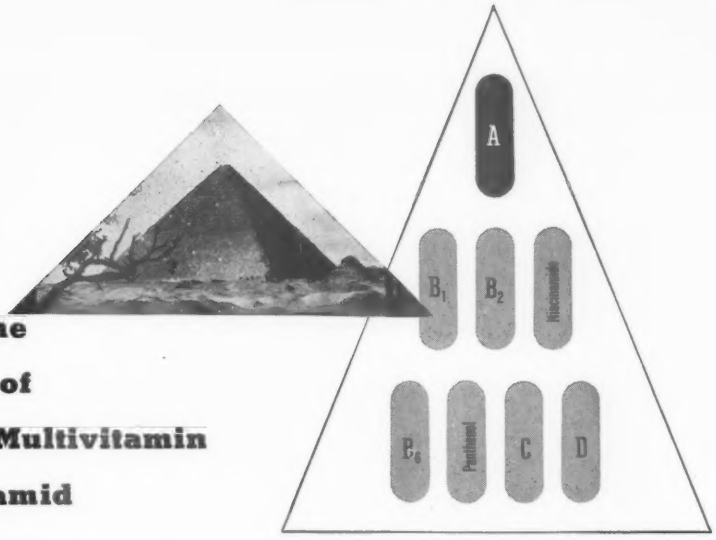

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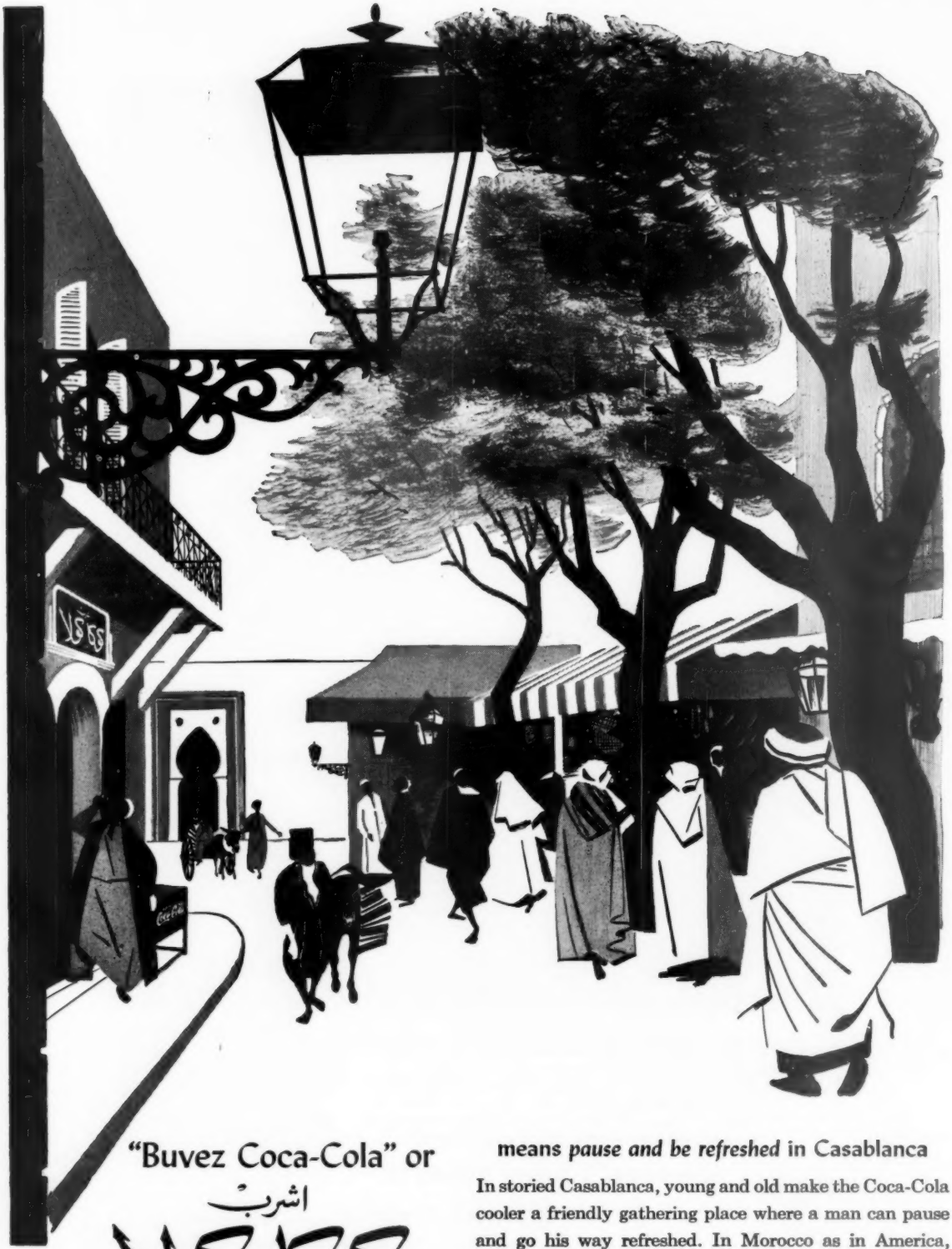

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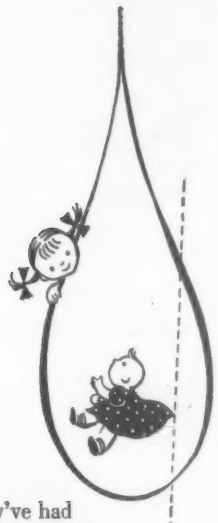

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Psychosomatic Principles

CARDIAC ILLUSTRATIONS

Jessie A. McGeachy, M.D., F.R.C.P.(C.)

CLINICAL DIAGNOSIS in psychosomatic medicine refers to the structural and physiological deviations as well as to the underlying or associated psychological disturbance. It is revealing to note that psyche is derived from the Greek root meaning breath or to breathe. When we study and treat organic disorders in the breathing body, we are practising complete medicine. The study and treatment of organic disorders where breathing is minimized, as in anaesthesia, is surgery; where breathing is extinct, it is pathology; and where it is exaggerated it is psychiatry.

The original approach to the study and teaching of medicine was symptomatic. Even today patients consult doctors usually for two main discomforts: pain and fear. There is a third modern reason, an outgrowth of public health education: the desire to prevent disease and early death, which indirectly is fear also. Most of our patients, therefore, are impelled by emotion to consult a doctor. It is significant, too, that the original entry in every good medical history is the chief complaint, which is a part of the patient's subjective experience. This complaint serves as a frame of reference for direction of the investigation of the case.

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Fruitful investigation will satisfy the doctor's curiosity and concern as to the cause of the complaint. Successful therapy will relieve the complaint of the patient and nullify the emotional experience of discomfort or fear which impelled him to seek medical advice in the first place. Thus, both doctor and patient live happily ever after, as the anxiety of both of them is compensated. At least, this is the sequence that seems ideal, but like so many ideals the actual performance in the majority of cases falls far short of this dénouement. In 40 to 70 percent of cases, what actually happens is this: Both the patient and the doctor have a logical anxiety about the cause of the patient's distress. Full investigation convinces the doctor that the cause is either (a) organic or (b) functional. In (a) treatment restores the organic integrity by objective signs and the doctor no longer experiences concern. The patient's concern may be dispelled coincidentally with the doctor's, or it may continue even in the presence of re-established organic integrity. In the case of (b) the doctor informs the patient that no organic treatment is necessary and the doctor loses his concern over the patient's complaints. This knowledge, however, does not necessarily dispel the patient's discomfort. So we are left with a patient who is still experiencing the emotional distress for which he first consulted the doctor. This is a potential source of frustration to the doctor, who feels slightly irritated and slightly guilty perhaps, because he has been unable to convince the patient of his own conviction, and he is in danger of experiencing further anxiety as a protective reaction.

Now the doctor is in distress too, and we see a sorry spectacle of two miserable human beings who are as mutually helpless as if they spoke different languages, as indeed they do, for the doctor will say: "Your heart is normal, your x-rays are normal; there is nothing wrong with your blood or your urine or your blood pressure." The patient, however, seems only to be further distressed by this good news as he keeps repeating, "Well, maybe you can't find anything wrong with me, but I still feel sick; my heart pounds, my back aches, I can't catch my breath, I have a pain in my stomach." Then the doctor says, "Maybe you feel sick, but you are not sick," and there is no treatment he can justify himself in giving the patient. Then the patient persists, "But what shall I do?" So the doctor calls in the nurse and says, "Please have this patient booked for Neuropsychiatry."

In the good old days, when neuropsychiatrists were not lurking around many office corners, the doctor would say to the patient, "Go away on a trip — go for a sea voyage — go to a spa — or have another baby — or don't have any more babies — or take a fishing trip — or buy a new car — or buy a new dress —or get a new girl friend." Then, if the patient did make an escape from his or her environment and return improved, the doctor would reason thus, "You see, Mrs. So-and-So's pain was not due to cancer after all because it disappeared with a trip to Florida. Therefore there was nothing wrong with her." The obvious logical conclusion, however, is not admitted, that there was something very wrong with her, which was exactly that she had never had a trip to Florida or anywhere else out of her environment for ten years! It is truly revealing that in ordinary medical investigation the patient's external life and environment are usually disregarded or not minutely observed. However, when minute observation of the great subcutaneous environment reveals no pathological condition the doctor impatiently throws the patient back into the bramble-bush of his tangled life. During the bacteriological and machine era in medicine, it has been considered definitely unscientific and distinctly undignified for the physician to display interest in or take responsibility for the deranged emotions of a patient; and in most cases, this fine ethical scorn was the result of ignorance and fear on the part of the profession who were woefully poorly trained to treat human disease in the breathing state. A few physicians would achieve success in handling patients with emotional disturbances plus or minus organic disease. Either they had a wide and wise knowledge of human nature, or they were unusual personalities themselves and fitted into the so-called "character" types, who practised the art as well as the science of medicine. Just as in skillful clinical medicine the masters are wise in their knowledge and observation of the natural history of disease, so the successful handling of so-called psychosomatic disorders is achieved with a background of the knowledge and observation of the natural history of personality and human life.

All other forms of life are studied in terms of their environment and, indeed, it is a biological truism that no living organism illustrates its definition except in terms of its environment. For example, a fish out of water is not a fish, it is an entrée. If we want to learn the physiology and pathology of the salmon, we will not go to a full course dinner at a restaurant, we will spend our vacation in the Fraser River Valley. Similarly if we want to study the changes in an ulcerated gastric mucosa, we will not confine ourselves to a perusal of x-ray films, titration values for hydrochloric acid, or statistical charts, but we will also try to obtain evidence of the patient's reactions when he is working out his income tax or approaching his boss to ask for a raise in salary. Wolf and Wolff have enriched our knowledge of gastric physiology mightily by observing the exteriorized gastric mucosa of the famous Tom when he was under stress of emotions such as fear, anger, happiness, elation, insecurity, and shame. They have drawn startling conclusions in relation to the effects on gastric functioning of total behaviour of the individual and his adjustment to his habitat. They have also demonstrated with studies of circulation time, vital capacity, and stroke volume, significant alterations in relation to "day-by-day" repeated stresses.

In other words, we should apply to a study of the personality the same disciplines which we apply to the study of organs. Whereas the normal and abnormal functioning of organs is in terms of structural development, similarly the structural development of the personality is in terms of the functioning of the emotions and the behavior of the total individual. History-taking is the first requisite in evaluating personality development. Analogous to the complete medical history, we ask directly for details as to birthplace; position in the family with relation to siblings; economic status of the family and that other intangible status which we may call the emotional climate of the home, which is operative in moulding the pattern of the patient's emotional reactions; educational history, from which we obtain an inkling of the intelligence level of the patient; work history, as an expression of life goals, with resultant suc-

cess and failure; marriage history, also in relation to life goals, emotional satisfactions, and the interpersonal relations of individuals. In addition, it is valuable to get an impression of tastes and habits in recreation, habits of living, and techniques in work. In the work situation, mechanical factors such as hours and spacing of jobs are important to know, as well as the emotional climate of the office, institution, hospital, shop, or house concerned. These basic factors can be obtained quickly by the direct question method in a patient whose attention and cooperation are adequate. If this method is impossible because of the patient's emotional disturbance and rambling talk, the method of quiet listening with periodic interpolations by the examiner will yield much of this information, which can afterward be organized chronologically. This knowledge gives the examiner a basic orientation in outlining the patient's personality profile, and also gives the patient confidence in the doctor's sincerity and thoroughness. The immediate situation should then be explored in detail; if it represents a focus of acute emotional import, it may not be ascertained until after the physical examination is completed or until a further interview. We are all familiar with the anxious patient who presents entirely negative physical findings and who, after being acquainted with the final report, reveals the reason for consulting a doctor. He had an underlying fear of cancer or of heart disease, a fear precipitated by the death of a friend, or by cancer having been diagnosed in a relative. This is an example of a normal and logical anxiety which is allayed by knowledge of the true facts. One does not need to be a maladjusted personality to experience such anxiety. If however, the anxiety persists without logical reason and is not amenable to explanation, then one begins to look for more remote causes of personality disorder. There is no substitute for time and care taken in one's early contacts with the patient to obtain this detailed information. Minutiae of knowledge, which is the hallmark of the master clinician, is still the safest standard in investigation of functional disorders.

Besides the direct and indirect methods of obtraining a personal history, there is the Adolf Meyer type of chronological life chart which synchronizes episodes of physical disease with major life events and aberrations in emotional reaction and behaviour. This demonstrates the quality of personality adjustment in sequence and is useful to both the doctor and the patient in elucidating mechanisms of symptom formation. In this type of survey it is well to get a picture of the reactions of the patient in his periods of successful as well as unsuccessful adjustment. Another useful aid is for the patient to provide his own biography, from which such a chart can be compiled. This, of course, should be a confidential record between doctor and patient only.

After the complete history, a careful physical examination is performed, any special investigation being carried out as indicated. By this time, the doctor should have made a diagnosis and be convinced in his mind of the disease in the soma or the psyche or both, which is producing the disability. It is well at this point to inform the patient honestly and frankly of the doctor's opinion. Particularly, the doctor should be straightforward, definite, and consistent about the physical findings. If he is not, it may be difficult to ensure the patient's cooperation in therapy. No matter how persistent the patient's fear of disease, the doctor must resist any subtle manoeuvering into admission of a questionable physical cause of symptoms. It is just here that the doctor's hand is strengthened by his complete history and examination. Repeated examination or additional investigation after this are not only unnecessary but harmful, because they serve only to perpetuate the patient's fears, and to encourage him in the endless search through one organic system after another for the cause of his disease. If the doctor allows himself to be lured into this will-o-the-wisp quest, he will find no rich treasure, and the patient will end up having been "x-rayed from head to foot" and being left with very little money, all his old symptoms, and possibly a few new ones. That is not to say the patient is never to be re-examined, because there is just as much danger in the other extreme of missing an organic lesion in a known psychoneurotic, because of failure to consider seriously the onset of new symptoms. A safe rule is to perform an annual routine physical examination with urinalysis and haemoglobin estimation. The writer with a surgical colleague is treating a patient with a typical psychoneurosis, in whom, during the three year course of regular visits, a repeat physical examination revealed a nodule in the breast which on removal was found to be malignant. In this case, surgery was a more laudable and successful therapy than reassurance. Incidentally, this patient illustrates the commonly observed phenomenon of remarkable loss of her chronic anxiety symptoms with the appearance of a tangible organic lesion. The organic lesion now justifies her invalidism so that anxiety symp-

toms are no longer necessary to insulate her handicapped personality from reality. This case also illustrates the protective role of anxiety in psychosomatic illness. Physiologically, anxiety is normal and useful as a stimulus to action when the organism is faced with a decision involving conflicting aims. If, however, the anxiety persists without being converted into action, the conflict is not solved, but the anxiety incapacitates the individual for the action required for its solution, and in this way removes him from active participation. I always think of persistent anxiety as being the expenditure of force through no distance, which produces heat and friction but no work. For example, the spinning wheels of a car stuck in the snow wear down both the snow and the tires but the car stands still as the wheels move through no distance. The effect of friction on the tires is analogous to the physiological wearing down of the individual by anxiety, and the literature is full of the effects of emotion on bodily functions (as summarized in "Emotion and Bodily Change" by Flanders Dunbar). The force that finally moves the stuck car is the resolution of static energy through distance. It is an analogous resolution of static anxiety into purposeful action which will resolve a conflict. As Sherrington states, the best way to deal with tension of emotional origin is by action, the next best way is by speech; and the least effective is by thought. We cannot yet demonstrate histologically the sequence of events when static anxiety is converted into muscular action, but it is not too visionary to postulate that this will be done in time. For example, Fulton states that, "The newer disclosures concerning the cerebral cortex and the autonomic nervous system give an adequate physiological basis for the recognized relationship between mental states and visceral processes. It is this influence of the higher centres on autonomic function and the effect of disturbed somatic functions on these centres with which psychosomatic medicine is particularly concerned."

Case Reports

I should like to summarize briefly a few clinical cases which illustrate the influence of emotion on organic disease.

The first case is that of a man of 41, with rheumatic heart disease and subacute bacterial endocarditis, cured clinically and bacteriologically by penicillin two years ago, now back at full time work in a newspaper office. One Monday morning he arrived in the office early, with the story of sudden onset, 36 hours before, of severe, constricting pain under the sterum, associated with tachycardia. On examination he was in a state of shock, dyspnoeic, collapsed, with grayish cyanosis of hands and face. Blood pressure was 118/70. Extremities were cold. The heart was fibrillating at a rate of 120 per minute. Chest was clear. Pulsations were present in all extremities. The first impression was that with the sudden onset of auricular fibrillation he might have had a pulmonary embolus or that he had a recurrence of his bacteraemia. He was given morhpia and atropine and while preparations were being made for an electrocardiogram, the heart suddenly reverted to a regular rhythm with a rate in the nineties. After an hour, his blood pressure had risen to its former level of 138/80; his colour had improved; and he became warm and comfortable. There was no leukocytosis or rapid sedimentation rate. Electrocardiogram showed no change from former ones. There were no new murmurs in his heart. Blood culture for streptococcus viridans was negative. X-ray of chest was clear. Our diagnosis was paroxysmal auricular fibrillation. About a week after this attack, the patient asked: "Could a great shock have caused that attack?" Then he told us that before the attack he had been working in the office as usual, when he received a most disturbing personal message, just as bad, he said, "as if the nearest person to you in the world had died." Immediately he slumped over his desk with the severe pain in the chest which kept him awake all that night and continued through the next day. We were never able to discover any change in the organic state of his heart, and he has since shown none.

The next case is of a woman in her fifties who has hypertensive myocarditis with moderate enlargement, but has never had failure. She arrived for examination one day with the story that a week before she had experienced a severe constricting pain in the precordial area which had been accompanied by dyspnoea and had kept her awake and sitting up all night. It had subsided by morning, and had not recurred, and she had had no residual decrease in exercise tolerance or reduction in her usual activities. Physical examination was unchanged. Electrocardiogram was unchanged. There was no leukocytosis or rapid sedimentation rate. When acquainted with all the negative findings, the patient suddenly asked, "Could a severe shock cause an attack like that?" Then she explained that in the evening preceding her attack a serious crisis in domestic affairs had occurred.

These cases are cited to show the influence of

strong emotional stimuli on existing heart disease. Both of these patients were intelligent and emotionally stable. The production of their attacks is similar to the production of angina pectoris with emotional strain in patients who have angina of effort with markedly reduced myocardial reserve. For the mechanism of this phenomenon, Fulton again has an interesting speculation to offer, based on the newer knowledge of nervous system physiology: "Recent experimental work shows that autonomic nervous regulation of the heart as well as of blood pressure and many metabolic functions is under control of hypothalamic centres. Stimulation of the anterior hypothalamus produces slowing of heart rate and prolongs A-V conduction. Stimulation of posterior hypothalamus causes tachycardia and frequent extra systoles. Such experimental observations are strongly suggestive of existence of subcortical centres influencing cardiac activity. In addition, there is reason to believe that these hypothalamic centres are related to emotional expressions. Thus psychic impulses may influence cardiac activity by upsetting the tonic balance in the cardio-regulatory centres."

Another case bears out this hypothesis. A woman in her early forties had for three years frequent attacks of paroxysmal auricular tachycardia (diagnosed by electrocardiogram) which were prevented by quinidine sulphate, three grains thrice daily. At the outbreak of war her husband went overseas. Although continuing to take quinidine, the attacks became more frequent and severe. The most severe one lasted for five days at a rate of 180 to 200 per minute. Signs of circulatory failure began to appear before the attack finally responded to strophanthin intravenously. No evidence of organic heart disease had previously been demonstrated. However, she continued to have attacks so frequently and so severely that she became a semi-invalid, a great departure from her previously active and gay life. Larger and larger amounts of quinidine were required to control the tachycardia, and in one attack mecholyl was the only effective drug. After six or eight months of this condition, it became apparent that her clinical control was very precarious. The outstanding feature of this patient was her deep resentment of her husband's having gone overseas. He was in his late forties, a veteran of the first World War, in charge of a responsible business, married, with two children, and his wife felt that it had been unnecessary for him to go overseas, at least so early in the war, that it had represented an adventurous escape for him, whereas she was left alone with the dull administration of a large city home, plus a farm, and the responsibility of their two sons, 10 and 12 years. Her resentment became so severe that she sold their home, put the two boys in boarding school and was preparing to sell the farm. A psychiatrist recommended that her husband be recalled. This was done, and when the family was re-established, the severe and frequent attacks of tachycardia ceased, the patient was again carried successfully on a maintenance dose of quinidine daily, and resumed an active life. This is an example of a dependent person, subjected to emotional tension, which by virtue of its magnitude intensified to an unbearable degree a coincident physical defect, which under conditions of good emotional adjustment had been only a minor disability. The adaptive mechanisms of her personality were not strong enough to prevent invalidism until the emotional strain was reduced by external aid in altering her environment.

The last case is that of a young woman who had a successful dressmaking business for 15 years before her marriage, in her late thirties, and now keeps house and cares for her baby under a year. In the last few months she became extremely fatigued, nervous, and depressed. Whereas she had been a well trained and efficient dressmaker, she is quite unprepared for her present jobs. In addition, the conditions of her working day are different, as she used to have the stimulus of meeting people and now is isolated all day long with her baby, in an environment where she has few stimulating contacts. Even though the husband and wife are compatible and happy, there is enough frustration in this situation to be a potential source of emotional tension. However, on physical examination, she is found to have a rheumatic heart disease with mitral stenosis, and on careful questioning it is also found that she has had a definite reduction in exercise tolerance in recent months. This is an interesting example of fatigue, probably the result of a combination of physical and psychogenic factors. She was advised to study child training and to organize a more balanced routine for her hours of work, rest, and recreation.

These few cases illustrate the need to treat the total individual, rather than a disease or a group of symptoms. Also they illustrate the positive factor of motivating the patient to live intelligently in relation to his disease. As Osler said, "What happens to a patient with tuberculosis depends more on what is in his head than what is in his chest." This is where prognosis touches the natural history of personality as well as the natural

history of disease. And fashions in prognosis change as our knowledge advances. For example, it used to be thought that a woman with mitral stenosis was inadequate for pregnancy; now we know her myocardial reserve is more adequate for pregnancy than it is for tooth extraction without antibiotics, or for a poorly regulated day of 10 to 12 hours of housework plus child training. Similarly a mental defective is inadequate for adjustment at a complicated level where initiative and independent decision are required, but is adequate in a simple situation with supervision. Patients with reduced emotional reserve, through defective personality development and repeated insecurities, are found among all intelligence levels, among productive and responsible citizens, and can be taught to live within their emotional tolerance as a diabetic can be taught to live within his islet tissue tolerance. If we define to ourselves our goals in treating these patients, we will not dismiss them as unworthy of therapy, but will utilize our rich fund of knowledge to apply physiological, psychological, and sociological measures, as well as medical and surgical procedures, to the task of maintaining the indivisibility of the psyche and the soma.

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Anaesthesia for Patients with Heart Disease

Margot W. Goldsmith, M.D. (Freib.), L.R.C.P. & S. (Ed.), D.A. (Eng.)

AS USUAL IN MEDICINE it is not the localized lesion only but all the subsequent or accompanying deviations from the normal that determine the whole picture and with it the judgment of the anaesthetist as to the optimal conditions he can contrive for his patient. The site and extent of the heart lesion, the type of cardiac irregularity, the state of efficiency of the myocardium, as well as of the liver, kidneys, and adrenals, are the most important factors influencing the choice of premedication, anaesthetic agent, method, and management. In addition age, general health, and certain surgical requirements have to be taken into consideration.

The great sensitivity of the diseased or debilitated cardiac muscle to lack of oxygen must be recognised. Full oxygenation, therefore, must be ensured during all periods of anaesthetic management. Obstruction of airway, respiratory depression, delayed elimination of drugs, increased resistance to breathing, and faulty or incomplete resuscitation as well as neurogenic, toxic or haemorrhagic shock, should not be allowed to develop, because of the anoxia which they cause. For the same reason frequent re-expansion of the collapsed lung is essential in cases where the chest is opened during the course of the operation, either purposely or inadvertently.

Increased sensitivity to adrenaline of the damaged or anoxic heart muscle is a further factor to be borne in mind. Fear, pain, disorientation, or struggling during induction, with consequent stimulation of adrenaline secretion, may thus precipitate or aggravate cardiac irregularities during anaesthesia. Raab[14] has described the principles underlying the neurohormonal mechanism of cardiac function as follows: "The function of epinephrine as an oxidation catalyst; the specific heart anoxiating effect of epinephrine (sympathin) regardless of hemodynamics and coronary flow; the influx into the heart muscle of sympathomimetic amines (epinephrine, sympathin), both from the circulating blood and from the supplying sympathetic nerve terminals, their functional potentiation through the thyroid hormone and the adrenal cortical hormones, their increased accumulation in the heart muscle under condition of sympathetic stimulation and with advancing age: their pathogenic effects upon myocardial metabolism structure and electrocardiographic manifestations: the fatal effect of their excessive accumulation in the heart above a definite critical threshold, acute or chronic."

The efficiency of the heart muscle, as well as of the hepatic cells, depends to a large extent on their glycogenic content. Long starvation or severe purging prior to or after operation causes depletion of glycogen and must therefore be avoided. In many cases of heart disease and especially in those accompanied by cardiac failure, not only gastric secretion but hepatic and even pancreatic function may be affected and digestion be impaired. Thus a certain degree of relative hypovitaminosis may result through either insufficient intake or inadequate utilisation, or both. Vitamins B and C are especially important for normal cardiac conductivity and adequate functioning of the acetylcholin-adrenaline, as well as the oxidation-reduction mechanism. In addition, vitamin C is known to have a diuretic action especially in cardiac failure. For all these reasons it is desirable that cardiac patients should be supplied with sufficient or even additional amounts of these vitamins. The special role of the liver and kidney in the avoidance or production of shock has recently been stressed again by Zweifach.[15,16] Functional efficiency of the adrenal is of equal importance, this gland being concerned partly with normal reaction and function of the vasomotor system and protein and carbohydrate metabolism, partly with the ability of serum to support acetycholine synthesis.[17]

It must be the aim of the anaesthetist to restore, and maintain, cardiac function as near to normal

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as possible. Digoxine and cedilanid (lanatoside C) are the glycosides most commonly used when dealing with irregularities of heart rate, whereas quinidine might have to be resorted to where the former have failed. Strophanthus intravenously with or without glucose has been advocated for cardiac failure in cases of emergency. It must be remembered however, that in the aged without cardiac failure, digitalis or its derivatives are to be used with great care and discrimination since they may lead to block or fibrillation. In these cases a combination of iodides and barbiturates is useful to prevent angiospasm, peripheral as well as coronary. In all cases a low salt and adequate but easily assimilated carbohydrate diet is helpful in avoiding water retention and preserving the glycogenic content of the organs.

It might be well to stress here the danger of drastic diuresis by mercurials unless adequately supported by digitalis during and for three or four days prior to their administration. The heart will have to cope with an increased volume of circulating blood and with increased pumping during diuresis. Any new strain superadded to this may lead to irreversible damage.

General Management Throughout the Operative Period

Pre-operative medication: Barbiturates, especially the long acting ones, should be strictly avoided on account of the danger of respiratory depression and consequent anoxia.

Morphia should be administered with great caution for the same reasons. The influence of this drug on cardiac conductivity is still controversial.[7,8] Its use as anodyne, however, is justified though even then only in small doses, just enough to alleviate or eliminate pain. In the light of experience, morphia has proved a useful premedication for anaesthesia in surgery of pulmonary stenosis.

Hyoscine increases the danger of disorientation and is therefore unsuitable. When using atropine, the environmental or room temperature, age, blood pressure, and basal metabolic rate of the patient have to be taken into consideration as well as the tendency of this drug to perpetuate tachycardia.

In patients with cardiac failure absorption is delayed and circulation time retarded. The time required for parenterally and orally administered drugs may thus be unpredictable. In these cases intravenous injection may prove an advantage if very slowly and carefully carried out.

Anaesthetic Agents and Methods

As regards the anaesthetics proper, certain points should be observed. An ultra short-acting barbiturate such as thiopentone, 1 to 2.5 percent solution administered slowly and with caution, is pleasant for the patient and without danger; it is an advantage to let the patient inhale a few breaths of oxygen prior to such an induction.

The need of a free airway throughout the period of unconsciousness has already been stressed. During operation an endotracheal tube not only guarantees this but allows also for assisted or controlled respiration to be used if necessary.

A minimum of dead space and resistance during inhalational anaethesia must be ensured. The to-and-fro absorption canister is the technique favoured by most. In children, who are especially sensitive to the increase of dead space and resistance, a non-return valve of Leigh or Stephen type, or Ayre's method, are of great value unless special surgery requires passive pulmonary ventilation.

Halogen compounds should be strictly avoided especially in the presence of hepatic or renal damage, but, even in the compensated cardiac case, it is preferable to choose some other agent or method. The conductive mechanism of the heart is more easily deranged during the administration of such compounds as chloroform, ethyl chloride, and even bromethol, though least with the unsaturated trichlorethylene; sensitization of the myocardium to the effect of endogenous or exogenous adrenaline has been claimed to be the cause.

General Rules Applying to all Cases of Cardiac Failure

Since circulation time is increased and peripheral oxygenation is less effective, cell metabolism is impaired, venous pressure being raised at the same time. In addition, the minute volume of blood circulating through congested or over-distended organs is decreased. Thus a state of localised, if not generalised stagnant anoxia exists. In these patients the threshold for pain perception is raised, and the quantitative requirement of analgesic or anaesthetic agents is reduced.

Nitrous oxide as the sole anaesthetic agent is highly dangerous in cardiac cases since only a relatively low percentage of oxygen can be given if it is to be effective. Unless used with 50 percent oxygen to supplement some other analgesic or relaxant agent, it should be avoided for any kind of operation lasting longer than a couple of minutes.

Cyclopropane and ethylene permit a high percentage of oxygen to be given in the mixture. Where an inhalational anaesthesia is required cyclopropane can be regarded as the agent of choice provided that the administrator is experienced and has taken the usual precautions against the dangers of explosion arising from this gas. The well known fact that cardiac irregularities ranging from ventricular extrasystoles to auricular fibrillation occur more frequently with this gas than with ether is no contraindication. Such arrhythmias can be obviated by supplementing the gas with small amounts of ether rather than by increasing the gas itself, should greater relaxation be required.

The dangers of postoperative pulmonary collapse following prolonged anaesthesia with absorption technique have to be borne in mind. Supplementing the mixture with helium is a safeguard against this. Replacement of oxygen by air at intervals and especially at the end of the operation serves the same purpose and may conveniently be done from a compressed air cylinder.

Curare: This must be used with extreme caution. The excellent relaxation it produces is liable to lead the inexperienced to reduce the supplementary analgesic mixture to such a degree as to permit neurogenic shock to develop insidiously. Cyclopropane-oxygen as an adjuvant is the method of choice, though excellent results may be achieved also with supplementary ether-oxygen. When using the latter mixture it has to be remembered that less curare will be needed on account of the curariform action of ether.

That curare has to be ruled out in any case associated with hypotonia of muscles and especially in myasthenia and Addison's disease is too well known to require more than just a mention here.

Spinal Analgesia: In the compensated heart case, a low spinal block may be used with great benefit. A high spinal, however, is to be avoided on account of the fall in blood pressure especially in arteriosclerotic patients, because they cannot compensate by vasoconstriction. The effects of posture on cardiac output and tidal volume during operation always require careful consideration,[9] but even more so when choosing this method. Arrythmias can be caused by a shift of the cardiac axis. Thus, in case of paroxysmal tachycardia, a steep Trendelenburg position or a procedure such as gastric suction may precipitate an attack.

At this point attention might be drawn to the hypertensive patient. In the modern treatment of this disease surgery and biochemistry have stimulated the anaesthetist to revise his conception of fall in blood pressure and its dangers and have brought about a revival of total spinal and extradural blocks.[7,9,10,11] Extradural and continuous spinal analgesia have been reported as favourable methods when dealing with cases of heart disease during pregnancy irrespective of the stage of compensation or whether or not caused by eclampsia.[3]

The results fully justify a continuance of these methods though they must be given a longer clinical trial before final judgment can be passed. In any case they require a great deal of experience and should therefore not be tackled by the occasional or inexperienced anaesthetist.

Block and infiltration analgesia, especially if balanced with light cyclopropane and oxygen sleep, have been used with satisfactory results. However, the anaesthetist has to take care, because of the lowered resistance to infection, not to inject into oedematous tissue.

Laboratory Methods: Electrocardiography and oximetry are of great value in lending support to the judgment of an observant anaesthetist. The former has been followed up by several observers. Animal experiments have, however, been found to have only a limited value. The human heart behaves differently and its actions vary according to the physiological and pathological conditions of the individual as well as of the organ at the time of the recording. Ziegler's findings,[10] though taken mainly from patients undergoing Blalock's operation, seem to prove the correctness of clinical observations of the human heart under anaesthesia. The main features of his recordings are as follows: Ventricular premature systoles under cyclopropane are abolished by switching to ether. Paroxysmal tachycardias appear as a rule only at the end of an operation and are abolished by vagal stimulation but perpetuated by atropine. Changes in the S-T segment and T-wave indicate myocardial anoxia, e. g., just before the release of the clamp after completion of the anastomosis in operations for pulmonary stenosis. Sinus tachycardia (100 to 200) precedes any irregularity but does not predict the kind which follows. Tachycardias over 200, if existing over a prolonged period, should be treated by digitalis, full dosage being required in emergencies. Bradycardia below 50 is always a danger sign and is usually refractory to atropine. It often leads to terminal asystole. Bradycardias down to 50, however, are not of serious significance and usually respond to atropine. The terminal mechanism is sinus arrest with complete cardiac asystole. In Ziegler's series ventricular fibrillation occurred only secondary to and long after asystole.

Ziegler notes that such deviation in the recording may be caused by vagal stimulation owing to

manipulation of organs by imbalances of the autonomic nervous system by direct effect of the anaesthetic agent on the myocardium, by positive intrapulmonary pressure with its consequent decreased pulmonary circulation and cardiac output, and lastly by adrenal cortical insufficiency.

Fluid replacement: This has to be carried out cautiously because of the danger of increasing an already raised venous pressure and thus producing pulmonary oedema. Glucose is preferable to saline solution and plasma to blood unless active haemorrhage occurs during operation. This applies especially to patients with pulmonary stenosis where a compensatory polycythaemia is usually present. In cases of anaemia blood transfusion may be necessary even before operation. Concentrated plasma is indicated if hypoproteinaemia exists due to some accompanying or underlying gastrointestinal disease.

In the presence of diabetes, however, replacement therapy by glucose has either to be avoided or to be supplemented by adequate doses of insulin.

Especially in the elderly and in infants and children requiring prolonged fluid replacement, a regular check on blood proteins, chlorides, and sugar is desirable to avoid upset of electrolyte balance and carbohydrate metabolism, as well as to prevent water retention.

Resuscitation: In the presence of ventricular fibrillation procaine administration is preferable to adrenaline since the damaged anoxic or toxic heart muscle is already sensitized to the latter. The "antiadrenalinéique" action of procaine is stronger than the "anticholinergique"[6] and it has been recorded that it is better tolerated in the anaesthetised than in the unanaesthetised subject.[9,13] If, however, there is real cardiac arrest, adrenaline must be resorted to, provided that complete removal of anaesthetic mixture from the circuit, oxygen administration combined with rhythmic manual compression of the breathing bag, and slightly positive pressure, as well as cardiac massage and intravenous ephedrine have been proved ineffective.

A warning should be sounded here against the application of too high positive pressures or the indiscriminate use of the oxygen by-pass on the machine. It has been recorded that increased intrapulmonary pressure reduces the blood flow through the lungs,[13] and thus causes anoxaemia and retention of carbon dioxide. Shock may ensue. In addition the lungs are said to exercise a certain amount of vasomotor control and that this is dependent on intrapulmonary pressure and can be thrown out of gear by sudden increase of the latter.[4]

In summing up, it might be stated that the greatest friend of the cardiac patient and anaesthetist alike is oxygen, and that their greatest enemy is anoxia.

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Electrograms Obtained During Cardiac Catheterization in Man

Bertha Rader, M.D.

In the electrocardiographic laboratory at the New York University College of Medicine, the potentials in the right heart and in the pulmonary artery and its branches have been studied by two string galvanometers. Simultaneous records can thus be made of activity in two points in the heart, or of an intracardiac point and some outside lead.

The electrode used is silver, cylindrical, about 1 mm. in diameter and 3 mm. long. The wire connected to it is insulated by a catheter, about 100 cm. long. The proximal end of the wire is connected to the galvanometer. The electrode is usually introduced through the left antecubital vein and, under fluoroscopic guidance, is placed in the pulmonary artery or one of its branches. By the central ray of the fluoroscope the frontal projection of the location of the tip is marked on the chest as exactly as possible. A chest x-ray is finally taken, with metal markers at all points where electrograms were recorded.

From the pulmonary artery the electrode is slowly withdrawn while the electrograms are being recorded simultaneously with some indirect lead. An attempt is made to explore thoroughly the potentials of the right heart cavity.

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Atrial Electrograms

The character of the P-wave varies in the recordings from the different locations. When the electrode is outside the atrium, the contours of this wave are not sharply defined and resemble P-waves recorded in the conventional indirect leads. Inside the atrium the P-wave consists of sharply defined deflections (Figure 1), which may be referred to in terms applied to ventricular deflections, that is, the P-wave of the electrogram shows Q, R, S, S-T and T, P_Q, P_R, etc. When the tip of the electrode is in the region of the sinus node, the P-wave is entirely negative, since excitation proceeds away from this point throughout its course in the atria.

As the electrode is placed lower in the atrium, the initial phase of the deflection becomes more positive as the path of the excitation approaching the tip lengthens. When the intrinsic deflection (or sudden change in potential) occurs, excitation has reached the electrode tip. Potentials following this intrinsic deflection represent excitation proceeding away from the electrode tip.

Figure 2 is taken from a case of complete heart block. The P-wave may be analyzed more easily, undistorted by the onset of QRS. Certain features, therefore, are more clearly visible than in tracings of normal sinus rhythm. This P-wave consists of a positive and a negative deflection representing excitation, followed by a slower pair of waves of lower voltage and reversed polarity, representing recovery. This final phase is usually hidden by the onset of QRS when complete heart block is not present.

Atrial excitation, therefore, like ventricular excitation, has a phase of increasing activity, maximum activity, and recovery.

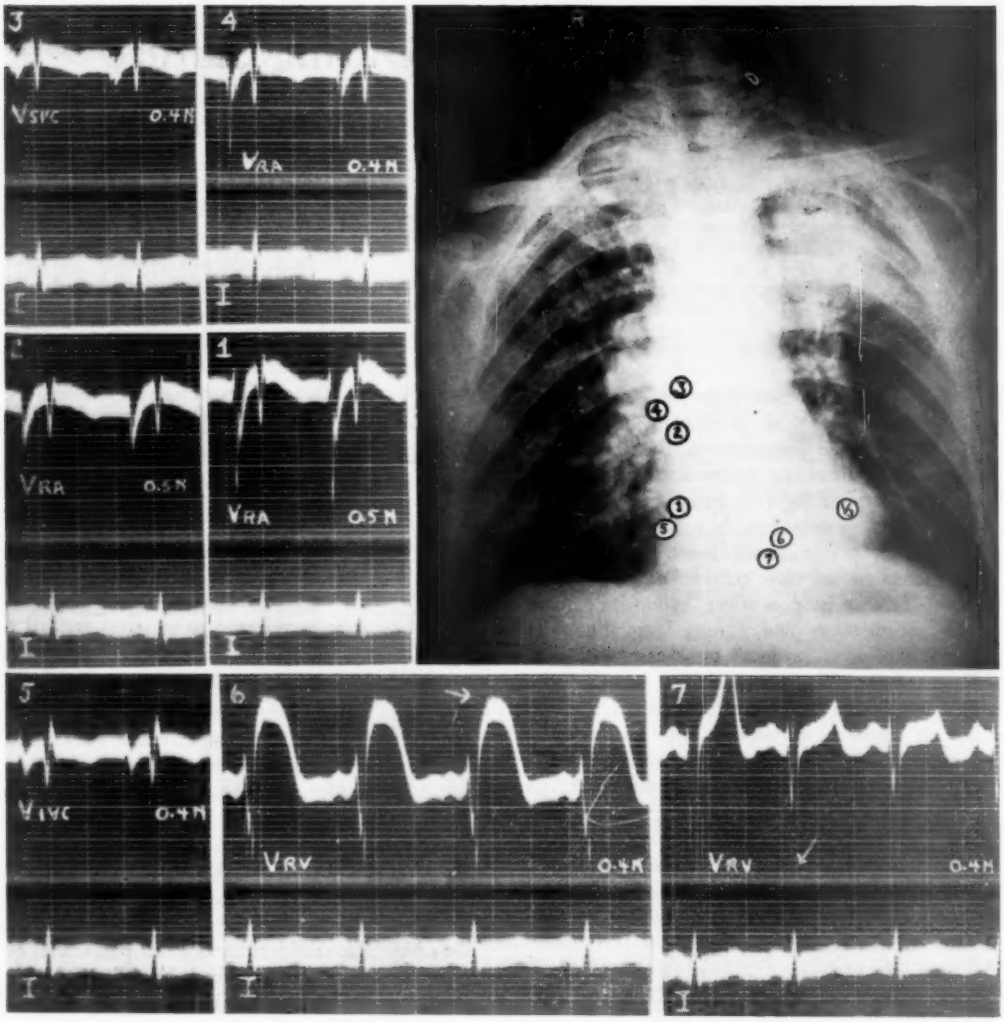

Fig. 1

Fig. 1. **Electrograms recorded at different regions in the heart and great vessels. Numbers in the upper left hand corners of the separate records correspond to locations as numbered on the x-ray. In each record the upper tracing is an intracardiac lead, while the lower record is the simultaneously recorded Lead I. V = potential; SVC = superior vena cava; RA = right atrium; IVC = inferior vena cava; RV = right ventricle. N= normal sensitivity of the galvanometer string (1 mv. = 1 cm.). Thus, 0.3 N means that in a particular tracing 1 mv. = 0.3 cm. Time intervals (vertical lines) are 0.2 second.**

Fig. 2

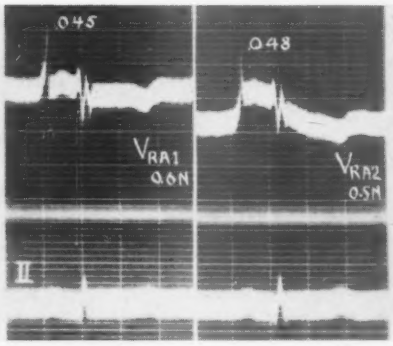

Fig. 3

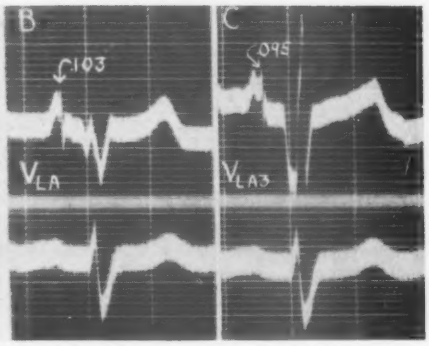

Fig. 4

Fig. 2. **P-wave in a case of complete heart block (greatly enlarged). The rapid positive and negative deflections (excitation) are followed by a pair of slower negative and positive deflections (recovery). Upper tracing is recorded from middle of right atrium; lower tracing is standard Lead I.**

Fig. 3. **Electrograms from the cavity of normal right atrium. The P-wave in the record on the right (V_{RA_2}) is followed by an elevated S-T segment ("injury current"). The record on the left (V_{RA_1}) shows the P-wave in this same patient and nearly in the same region, undistorted by this S-T displacement. Lead II is recorded simultaneously (lower tracing) and shows no evidence of this S-T displacement. The figures 0.045 and 0.048 indicate the time in seconds after the beginning of P-wave in Lead II when the intrinsic deflection of the upper tracing occurs. Other symbols are the same as those used in Figure 1.**

Fig. 4. **Electrograms recorded from the left atrium in a case of interatrial septal defect. The figures 0.103 and 0.095 give the time in seconds following the beginning of P-wave in Lead I at which the intracardiac intrinsic deflections occur in each record. (Compare these times with those noted in Figure 3.) Lead I (lower tracing) is simultaneously recorded.**

When the tip of the electrode makes pressure against the atrial endocardium, the record shows an upward displacement of the S-T segment of the P-wave (Figure 3). This distorts the appearance of the deflections. It occurs only when the electrode tip is in contact with the heart muscle, and exerts some pressure on it. The phenomenon is limited to the tip of the electrode. It is not seen when the electrode is withdrawn from contact with the muscle. It is not reflected in any manner on simultaneously recorded standard or precordial leads.

The intrinsic deflection in the right atrium is usually early, 0.04 to 0.06 second after the start of the excitation in the atria. Late intrinsic deflections are seen in the left atrium, as in the case of interauricular septal defect (Figure 4) where the tip of the electrode was placed in the left atrium. However, we, as well as other workers, have seen late intrinsic deflections in some regions of the right atrium and in the coronary sinus.

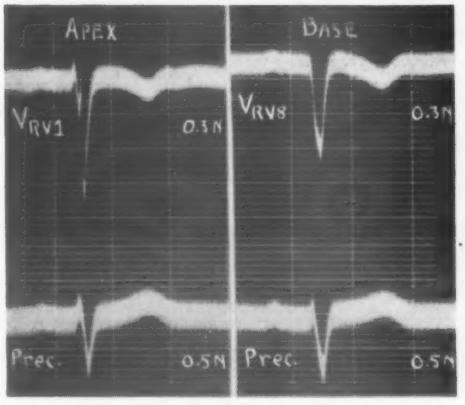

Fig. 5

Fig. 5. **Electrograms taken from (a) apex and (b) base of the right ventricle in a patient without heart disease. The lower tracing in each is a lead simultaneously recorded from the precordium immediately over the tip of the intracardiac electrode as located by fluoroscopy.**

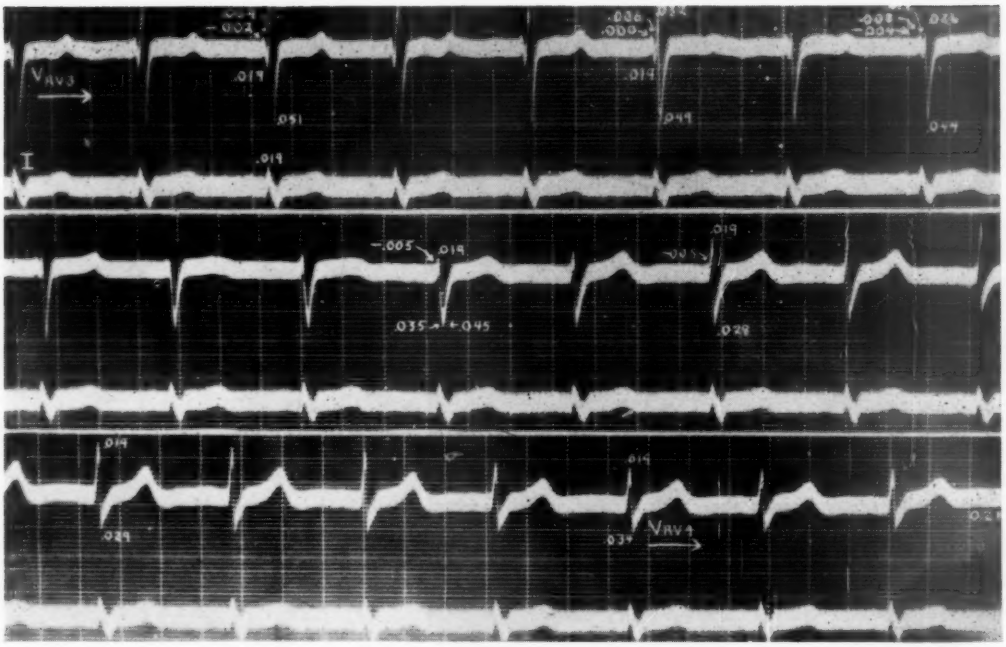

Fig. 6

Fig. 6. **Record showing the variations in the QRS of the cavity of the right ventricle as the electrode tip is being slowly withdrawn from the region of the base to the apex. (V_{RV_3}) and (V_{RV_4}) correspond to points 3 and 4 respectively on the x-ray seen in Fig. 7). This is a case of chronic cor pulmonale, with right ventricular hypertrophy. The three strips of tracing are a continuous recording, with the upper record showing the intracardiac potentials, and the lower a simultaneously recorded Lead I. Numbers near the different QRS deflections show the time in seconds at which each occurs before or after the beginning of QRS in Lead I.**

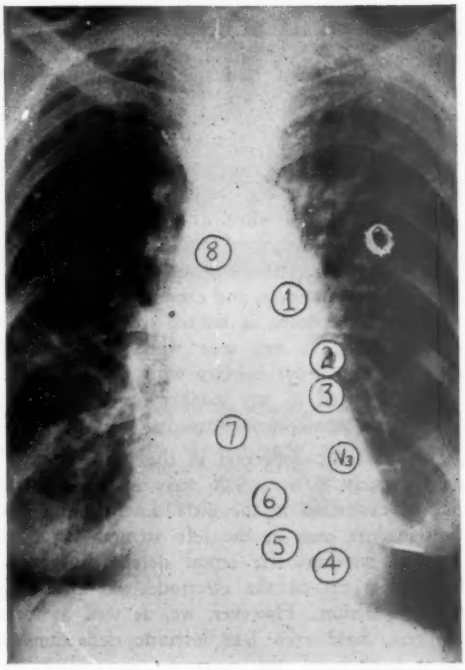

Fig. 7

Fig 7. **X-ray of patient with chronic cor pulmonale, whose electrogram is shown in Fig 6. The numbers 3 and 4 mark the starting and stopping points respectively of the tip of the electrode as it was slowly withdrawn while the tracings of Fig. 6 were being recorded.**

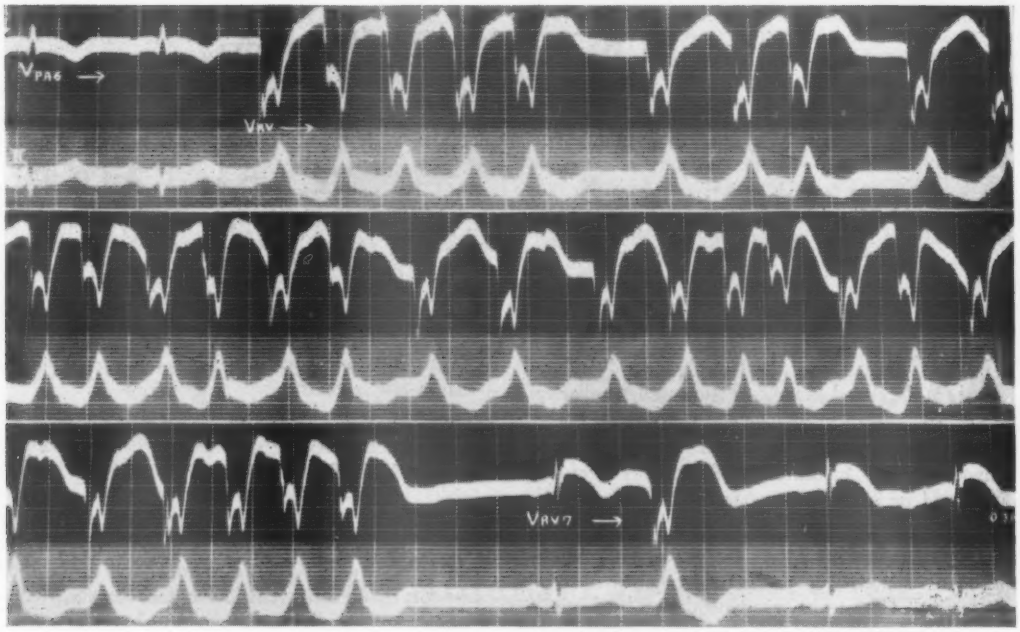

Fig. 8. **An electrogram showing ectopic ventricular rhythm, recorded while the tip of the electrode was being withdrawn from the pulmonary artery into the base of the right ventricle. Lead II has been simultaneously recorded. This patient had no heart disease.**

Ventricular Electrograms

The cavity of the right ventricle usually shows an initial small, positive deflection, but the later, major portion of the QRS is negative. The normal T-wave is also negative. This bears out the theory of the order of excitation in the ventricles, which postulates that the septum is first activated from left to right, at its upper portion, after which the rest of the septum and then the ventricles are activated from endocardium to epicardium. In cavity leads, however, variations in potential occur, both in normal and in diseased hearts. In the normal heart records (Figure 5) the initial R-wave is seen in the tracing recorded at the apex, but it is not present in the electrogram made at the base. Both records are from the same patient.

In Figure 6, obtained from a case of right ventricular hypertrophy, marked variations are seen at different locations in the ventricle. This record was made while the catheter was being drawn from Point 3 to Point 4 in the right ventricle. The location of these points may be seen in Figure 7.

Two phenomena are sometimes recorded in the right ventricle, which confuse and distort the true potentials. The first has been mentioned in discussing the atrial records, namely, the marked displacement of the S-T segment upward when the catheter tip makes pressure on the endocardium. The QRS and T-waves are also involved in the so-called "demarcation potential" or "injury current." (Compare tracings 6 and 7, Figure 1.)

Another irregularity is the occurrence of premature contractions or runs of ectopic rhythm. These are seen most often when the tip passes from the pulmonary artery into the right ventricle, and are usually ventricular in type. In our experience these paroxysms have not been accompanied by definite subjective symptoms in the patient. As illustrated by Figure 8, this arrhythmia effectively masks the true potential of the ventricular cavity.

From the study of these and other records obtained by the technique of intracardiac electrocardiography, it is possible to analyze in some measure the excitatory process of the intact human heart. Some theoretical aspects of excitation have been confirmed. There is evidence, however, that some concepts now held must be altered.

Use of Quinidine Following Myocardial Infarction

A. Henry Clagett, Jr., M.D.

WHILE QUINIDINE truly is a "double-edged sword," an increased familiarity with its actions and uses should make it one of the most valuable therapeutic agents to anyone treating myocardial infarction. Therefore, it should be of utmost importance to the general practitioner.

Quinidine has been used for years in the treatment of abnormal rhythm following myocardial infarction.[1] Despite its recommendation by Levine, many physicians still refuse to use the drug because of fear. The work of Smith and his coworkers,[2] however, in which they found that quinidinized dogs withstood coronary ligation better than control animals, is laboratory evidence in support of Levine's clinical findings; while the statement of Herrmann[3] that quinidine is a specific in the treatment of ventricular tachycardia reflects the opinion of most authorities.

Quinidine, like digitalis, depresses the cardiac conduction system. Otherwise, its action is unlike that of digitalis in that it causes a depression of the myocardium, making it less irritable.

In mycardium infarction, the intarcted area frequently sets up irritable foci in the ventricular myocardium. This is manifested by the occurrence of premature beats (extrasystoles). These beats may become frequent, giving rise to runs of ventricular tachycardia. A more serious condition exists when the ventricular tachycardia is sustained. This condition is dangerous because of the tachycardia itself, leading to heart failure, the development of ventricular fibrillation, or ventricular asystole, both of which are incompatible with life if the duration is more than a few seconds.

Quinidine is indicated, therefore, as a life-saving measure in those individuals developing ventricular premature beats or ventricular tachycardia following myocardial infarction. The dosage must be adjusted according to the individual situation, the occurrence of an occasional extrasystole not calling for as rapid action as in the case of established ventricular tachycardia.

Since some individuals have an abnormal sensitivity to quinidine, it is well to give a test dose of 3 grains by mouth before proceeding with the treatment. The occurrence of tinnitus, nausea, vomiting, diarrhea, or urticaria, while rare, is a contraindication to the use of the drug except as a last resort.

While many methods of administration have been recommended, no single dosage schedule is applicable to all cases. The drug should be given in an amount sufficient to produce the desired effect but insufficient to cause toxic reactions. In a patient having only occasional premature beats, a small dose such as 3 grains every 3 hours may be given and gradually increased as necessary to abolish the arrhythmia. In those with frequent premature beats or ventricular tachycardia, a stronger and more rapid effect is needed. Wegria[4] has shown that this is best accomplished by a large initial dose such as 6 or 12 grains. Massive doses frequently are necessary, Reich[5] having reported a case responding only after 185 grains in a period of two and a half days. Stempien and Katz,[6] furthermore, have suggested the combined use of quinidine and potassium in the treatment of refractory paroxysmal tachycardia. Finally, in critical cases, where immediate action is urgent, or in those whose vomiting or mental state precludes oral medication, quinidine by vein has been found to be effective, and safe.[7] Its intravenous use, however, should not be attempted by one inexperienced in this procedure.

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Summary

Quinidine has a depressing action upon the myocardium and therefore is indicated in conditions of myocardial irritability such as those frequently occurring following myocardial infarction. The onset of premature beats following infarction should call for slowly increasing doses of quinidine; the presence of ventricular tachycardia, however, is a medical emergency and calls for strenuous therapy, at times by the intravenous route. Every general practitioner should be familiar with the use of quinidine in this condition, but the intravenous use of the drug should be under the guidance of one who has had experience with the procedure.

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The Adrenal Cortex*

II. CLINICAL PATHOLOGY

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As one turns from a consideration of recent developments in experimental adrenal physiology to current work on diseases of the adrenal, one is struck by the greater volume of work in the former field as compared with the latter. It becomes apparent that, in the future, important medical discoveries in the field of endocrinology will come in increasing numbers from the biochemical laboratory rather than from the bedside. However, good clinical observation is always necessary, and in recent years many outstanding contributions have been made to our knowledge of disease processes in the adrenal cortex. This paper will discuss some of these.

Addison's Disease

A. Pathogenesis

The two principal causes of Addison's disease are idiopathic atrophy and tuberculosis of the adrenals. In recent years in this country there has been a relative increase in the proportion of cases proved at autopsy to have been caused by atrophy as opposed to those caused by tuberculosis.

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During 1941 to 1946, the Army Insitute of Pathology received material from 15 patients having atrophy and from 10 patients with tuberculosis. This probably reflects the decreased incidence of tuberculosis in the population in the last 40 years, although the suggestion has also been made that the higher incidence of atrophy is due to increased exposure to potentially toxic chemicals. Occasionally Addison's disease may be caused by neoplasm of the adrenal, amyloidosis, pyogenic infection about the kidneys, and vascular lesions. Rarely it is the result of lues, metastatic neoplasm, pressure atrophy, and hypoplasia of the gland. To these unusual causes of the disease must be added fungus disease, according to Rawson, Collins, and Grant.[1] They report two cases of Addison's disease, one the result of histoplasmosis, and one the result of cryptococcosis. They review the other reported cases and conclude that theirs is the first case in which Cryptococcus infection caused enough damage to the glands to result in adrenal insufficiency.

It should be borne in mind that in approximately 30 percent of the cases due to tuberculosis, the only active lesion is in the adrenals.

B. Pathology

The pathological picture in cases of Addison's disease due to tuberculosis differs from that in cases due to atrophy. In tuberculosis the process appears to begin in the medulla or in the inner cortex and to progress toward the outer layers of the gland, while in atrophy it seems to begin in the outer cortex and gradually to compress the medulla.

Friedman[3] studied the pathological changes in 21 cases of adrenocortical atrophy, or, as he calls it, "contraction." In 17 of his 21 cases, the adrenal lesions were bilateral. He found changes which ranged from complete atrophy to a condition in which regeneration of cortical cells and nodules occurred in atypical pattern, overshadowing the underlying atrophy. He concluded that the lesions of adrenocortical atrophy resemble closely those of necrotizing hepatic injury and its sequelae.

C. Pathological Physiology

The altered physiological functions in Addison's disease are well known, and will be only briefly listed.

1. Derangement of carbohydrate metabolism, probably due to decreased gluconeogenesis: (a) Increased glucose tolerance; (b) hypoglycemia with low liver glycogen; (c) increased insulin sensitivity.
2. Disturbances in electrolyte balance: (a) Low blood sodium and chloride with increased excretion of these in the urine; (b) high serum potassium with decreased urinary excretion of this element.
3. Increased concentration of the plasma due to the above changes in sodium, chloride, and potassium balance, resulting in hemoconcentration and low blood volume.
4. Decreased blood flow to all parts of the body as a result of the decreased total amount of blood. This probably results in impaired function of all body tissues.
5. Nitrogen retention.

D. Clinical Findings

In addition to the pigmentation, hypotension, and asthenia which are the usual diagnostic signs in Addison's disease, gastro-intestinal symptoms occur frequently, a fact which is often overlooked by the physician. Such vague symptoms as postprandial bloating, belching, hiccough, and constipation are frequently found early in the course of the disease. As the disease progresses, achlorhydria, nausea, vomiting, and recurrent episodes of diarrhea may develop. Pain in the abdomen, as well as in the back and legs, may be the presenting symptom. Dysmenorrhea is also common.

Probably as a result of the decreased circulatory minute volume, mental and nervous system changes may be the first to develop and may mislead the diagnostician. The patient may complain of either irritability or depression, of loss of memory, or of insomnia. Headache often is present. Care must be taken not to label the depressed asthenic Addisonian as psychoneurotic.

Laboratory findings in the disease are:

1. Blood: (a) Usually a normal blood count, but failure to show a decrease in circulating eosinophils after injection of pituitary adrenocorticotrophic hormone or of epinephrin; (b) low fasting blood sugar with increased glucose tolerance and insulin sensitivity.
2. Urine: (a) Increased sodium and chlorides, (b) decreased potassium; (c) failure to show increased excretion of uric acid after injection of adrenocorticotrophic hormone; (d) decreased 17-ketosteroids.
3. Low basal metabolic rate.
4. Hypochlorhydria or achlorhydria.
5. In some but not in all cases, x-rays of the abdomen will show calcifications in the adrenals.

Special tests which may be useful in the diagnosis have been devised. The earliest test to come into use was that of observation of the patient's response to a diet low in sodium and chloride and high in potassium. This often precipitates severe Addisonian crises, if used, the patient must be under very careful observation in a hospital, and the physician must be prepared to treat the crisis. A refinement of this procedure which consists of measuring the concentration of chloride in the urine during the test period was devised by Cutler et al.[2] in 1938. This test, in addition to being dangerous, is probably not reliable in patients who have glomerulonephritis. A safer test was proposed by Kepler et al.[4] and Gaunt[5] based on alterations in the body's ability to retain or to excrete water. In Addison's disease patients lack the ability to excrete excess water at a normal rate.

E. Treatment

As in diabetes, treatment is aimed at replacement of the missing hormone(s), correction of biochemical imbalances, and careful supervision of the patient in situations likely to make the disease worse.

The first thing to be done is to put the patient on a diet high in sodium and chloride and low in potassium, for a considerable number of patients can be controlled by this means alone. The potassium intake should be reduced to 2 gm. a day, or less.

Most patients, however, require adrenal cortical hormone administration. Two forms of this are available: adrenal cortical extract, prepared from beef adrenal glands, and synthetic desoxycorticosterone-acetate. The adrenal cortical extract has the advantage of correcting all deficiencies present, i. e., those of electrolyte, water, protein, and carbohydrate balance; while the synthetic hormone has little, if any, beneficial effect on protein and carbohydrate metabolism. A recent article by Soffer[6] seems to show that complications are more likely to result after an overdose of desoxycorticosterone-acetate than after excess adrenal cortical extract. The extract can be given subcutaneously, intramuscularly, or intravenously, and is invaluable in treating severe crisis, during which 50 cc. a day may be given. Oral preparations exist, but they are expensive, and the requirement is at least three times as great as for the parenteral extract. Maintenance doses by the injection route range usually from 1 to 10 cc. a day. The disadvantages of the extract are its high cost as compared with the synthetic hormone and the inconvenience of receiving the medication by injection. Also, it is inconvenient and painful to the patient to give doses larger than 5 cc. by intramuscular injection. The synthetic hormone can be given intramuscularly, sublingually, or by subcutaneous implantation. The sublingual method cannot be employed if large amounts of the hormone are to be used, or if the patient cannot be taught not to swallow the dissolving material. In all cases, the patient should first be regulated for about six weeks on daily intramuscular injections and the proper diet, so that his requirement for the hormone may be determined with accuracy, and so that, if he is intolerant to this form of medication, it may be stopped promptly. The patient should be kept on one brand of desoxycorticosterone-acetate, especially when pellets are implanted, as those from different drug houses have different rates of absorption.

The development of oily media for both the extract and the synthetic hormone permits the giving of injections at less frequent intervals than was necessary with the aqueous solutions. Grossman and Saward[7] report a case of a patient who was successfully controlled with injections of 3.75 mg. of desoxycorticosterone-acetate in oil every third day.

Sprague et al.[8] attempted to treat Addison's disease with synthetic 11-dehydrocorticosterone, but found that this is not a promising substance for this purpose since it has less beneficial effect on electrolyte balance than desoxycorticosterone-acetate. Similar results had been noted previously by other workers. Thompson[9] predicts that soon a synthetic product will be available which will affect all phases of the disturbed metabolism due to Addison's disease. Testosterone has been found by Thompson[10] to be a useful adjunct to adrenal hormone therapy in males in whom the adrenal therapy had failed to relieve listlessness and lack of secondary sex characteristics.

F. Addison's Disease Complicated By Other Conditions

Many interesting reports of Addison's disease co-existing with other clinical conditions have appeared recently, but space permits the review of only a small number of these. Knowlton et al.[11] discussed five pregnancies in four patients with Addison's disease in which all of the patients survived. One patient had a spontaneous abortion; two of the pregnancies were terminated operatively early in their courses; and two patients went to term. They found that the urinary 17-ketosteroids increased late in pregnancy in the two patients who went to term. The clinical management of such cases is discussed in the article. Ravreby and Sawyer[12] discussed the effect of adrenocortical insufficiency on the kidneys, emphasizing the fact that this effect is negligible except during crises. They then presented the case of a patient with coexistent Addison's disease and chronic glomerulonephritis. Lowrie et al.[13] discussed the treatment of the insulin-sensitive Addisonian who also has diabetes mellitus. They reported the successful management of a case by the use of globin insulin. This is considered the best type of insulin to use since, although it has a prolonged effect, it is shorter-acting than protamine zinc insulin which, by virtue of its maximum effect during the hours of sleep, may cause severe hypoglycemia. Sawyer and Solez[14] described a case of salt-losing nephritis which clinically resembled Addison's disease.

Adrenal Cortical Hypofunction in Young Children

In recent years, a new syndrome of adrenal cortical insufficiency has been described in babies. This syndrome is characterized by regurgitation, anorexia, vomiting, and failure to gain weight. These lead to dehydration and eventually to death in circulatory collapse if the condition is not treated. The clinical findings are accompanied by excessive urinary loss of sodium, chloride, and water. The disease is thought by Jaudon,[15] who

described it, to be due to a temporarily absent or insufficient secretion of the desoxycorticosterone factor. Treatment consists of the administration of desoxycorticosterone-acetate or of adrenal cortical extract. Extra sodium chloride is also given. Therapy is discontinued as soon as the child is in good physical condition and continues in this state on trial withdrawal of the hormone and the extra salt.

Adrenal Cortical Tumors

Many interesting cases of adrenal cortical tumors have been reported during the past two years. A valuable survey of 7,437 consecutive autopsies is presented by Commons and Callaway[16] who found adenomas larger than 3 mm. in diameter in 2.86 percent of cases. They found these in only four patients under the age of 40, and noted no difference in incidence in the two sexes. They attempted to correlate other pathological conditions with the presence of the adenomas, but found no difference in incidence of hypertensive cardiovascular disease, diabetes, cardiac enlargement, or changes in the gonads in patients with adenomas as compared with patients without them.

Feminizing tumors, which are much less common than virilizing tumors, have been reviewed by Armstrong and Simpson[17] and by Wilkins.[18] The latter author reported the first case of gynecomastia due to adrenal tumor in a prepuberal male. He contrasted this with a virilizing tumor in a female of the same age and showed that when examined microscopically the two tumors were found to be composed of identical tissue.

Weber and Menten[19] reported the case of a three-and-a-half-year-old male who had a virilizing tumor accompanied by hypertension. They studied the histology of the tumor and found many cytoplasmic granules containing, or associated with, cholesterol. They believe that this points to cholesterol as the precursor of the adrenal steroids.

Hain[20] studied cases of virilism, in six of which adrenal tumors were found. In three others, laparotomy disclosed hyperplasia of the adrenals. The author showed that on the basis of 17-ketosteroid excretion it is difficult pre-opertatively to differentiate tumor of the adrenal cortex or of the ovary from adrenal cortical hyperplasia.

A case of adrenal cortical adenocarcinoma associated with the clinical features of Cushing's syndrome is reported by Kepler et al.[21] Remission of symptoms followed removal of the tumor, and its recurrence was accompanied by a return of symptoms. At autopsy the contralateral adrenal was found to be atrophied, and there were two small chromophobe adenomas in the pituitary, believed to be caused by the excess estrogens produced by the adrenal tumor. The findings in this case would suggest the adrenal tumor as the origin of Cushing's syndrome.

Adrenal Cortical Hyperfunction Not Associated with Tumor

Non-neoplastic hyperplasia of the adrenal may give rise either to the adrenogenital syndrome or to Cushing's syndrome. The following tumors should be ruled out, if possible, before diagnosing simple hyperplasia: adrenal cortical adenoma, basophil tumor of the pituitary, thymoma, and arrhenoblastoma of the ovary. In most cases, the question of the origin of the adrenal hyperfunction is best settled by exploratory laparotomy.

Melicow[22] discussed adrenal hyperfunction, hyperplasia, and neoplasia, distinguishing between the two syndromes which result. He contrasted these, stating that patients with Cushing's syndrome have low resistance to infections and are poor surgical risks, while patients with adrenogenital syndrome are usually in good health and are good operative risks. He stated that the urinary 17-ketosteroid excretion is usually increased in the adrenogenital syndrome, and normal in Cushing's syndrome. Hain,[19] as was mentioned previously, has not found this to be true. Melicow mentioned one more difference between neoplasia and hyperplasia of the gland, which is that patients with benign neoplasms of the gland usually make excellent and complete recoveries postoperatively, while the results are variable and not so good in patients with hyperplasia.

Sprague, et al.[23] presented a case of a 14-year-old boy with severe diabetes and Cushing's disease due to adrenal cortical hyperplasia. They conclude that the diabetes, which was insulin-resistant and mild during fasting, was similar to that produced in animals by administration of the adrenal cortical steroids active in carbohydrate metabolism. The assumption is that it resulted from an over-production of these hormones by the hyperplastic adrenal.

Miscellaneous

Adrenal cortical substance is sometimes given to patients who do not seem to be able to develop the necessary resistance to a severe illness. Its usefulness is probably confined to those cases in which the symptomatology resembles that of adrenal cortical insufficiency: i. e., weakness, hypoten-

sion, anorexia, tachycardia, and so forth. A clinical condition which meets this requirement is radiation sickness, and Ellinger[24] has had good results, both in experimental animals and in man, with the administration of desoxycorticosterone-acetate for it.

The connection of the adrenal cortical hormones with hypertension is still not fully understood, and is a subject which warrants more investigation. Perera[25] gave desoxycorticosterone-acetate to five hypertensive subjects, and obtained equivocal results which led him to conclude that the pressor action of this hormone does not seem to be due to a direct humoral mechanism dependent upon its concentration in the blood.

Summary

Recent clinical advances in connection with the adrenal cortex have been reviewed. Present rapid advances in this field predict that in the future we shall be able greatly to improve the condition of patients with diseases of this gland.

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The Coronary Circulation

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THE IMPORTANCE OF STUDIES related to the normal and pathologic physiology of the coronary circulation is obvious in view of the ever increasing incidence of degenerative changes in this portion of the cardiovascular system. Such studies have been numerous and have contributed extensively to our present knowledge. Recently developed methods of investigation discussed here are among those which serve to elucidate and elaborate upon known concepts as well as to establish new ones.

Collateral Circulation of the Normal Human Heart

It is well established that intercoronary arterial anastomoses increase in size with the gradual development of coronary arteriosclerosis or cardiac hypertrophy.[1] However, the function of such anastomoses to any degree in normal hearts has been the subject of controversy. Some investigators considered anastomotic channels in the normal heart to be of inconsequential size,[2,3] while other concluded that many anastomoses of functional significance are present throughout the normal heart.[3,4]

By perfusing normal human hearts, postmortem, and beating dog hearts with (1) suspensions of radio-active red blood cells which could be measured quantitatively in any area of the heart, and (2) glass spheres of known diameters, Prinzmetal et al.[5] found intercoronary arterial anastomoses of arteriolar dimensions, arterio-venous anastomoses, and anastomotic channels between the coronary arteries and the ventricular cavities. These studies confirmed the existence of an extensive collateral circulation with anastomotic channels of various types in the normal human and dog's heart.

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Collateral Circulation in Beating Human and Dog Hearts with Coronary Occlusion

Perfusion of hearts with radioactive red blood cells after acute coronary occlusion in man and experimental acute occlusion of the anterior descending branch of the left coronary artery in dogs supplied evidence of a continuous actively circulating collateral blood flow in the portion of myocardium rendered ischemic by occlusion of its major artery.[6] By means of observations of slow motion pictures of both normal dog hearts and those with experimental coronary occlusion during the intravenous injection of fluorescein, which is visible in the myocardium under special lighting, it was concluded that collateral blood entering the ischemic myocardium was supplied largely by interarterial anastomoses between the adjacent coronary arteries and terminal branches of the ligated artery. These experiments indicated that after occlusion of the anterior descending branch of the left coronary artery the anastomotic blood supply to the ischemic part of the right ventricle is better than that to the ischemic part of the left ventricle. This explains the much greater incidence of myocardial infarction in the left ventricle than in the right ventricle in man. The fact that infarcts in man are generally smaller than the region of myocardium supplied by an occluded vessel is also explained by the presence of an actively functioning collateral circulation.

Since coronary arteriosclerosis with its attendant gradual narrowing of the coronary arteries, as it occurs in man, does not normally occur in the dog, the results described above, obtained from the dog's heart, apply only to acute conditions. Therefore, coronary anastomoses which function immediately after acute coronary occlusion must exist in the normal dog's heart. In man, extensive and long standing coronary arteriosclerosis generally precedes acute coronary occlusion, probably assuring an even better developed collateral circulation to the ischemic myocardium than occurs in the dog heart with experimental acute coronary occlusion.

Myocardial Contractility

The loss of myocardial contractility in ischemic myocardium after coronary artery occlusion has been observed experimentally[7,8] as well as clinically.[8,9,10,11] In slow motion cinematographic studies on dog hearts this myocardial noncontractility appears as a bulging or ballooning of the ischemic region of myocardium during systole. It apparently varies in extent and appearance with the state of the collateral circulation to the ischemic myocardium.

In the experimental animal, after acute coronary occlusion of an artery supplying a relatively small region of myocardium, the ballooning may be transient, appearing initially a few seconds after the occlusion and lasting only a few minutes. The phenomenon is thought to depend upon the reduction of blood supply and resultant deficiency of oxygen in the myocardial tissue affected by the occlusion. If the collateral circulation to the affected myocardium is adequate, as would be anticipated with small regions of ischemia, the ballooning may not persist. Conversely, the ballooning is persistent after occlusion of an artery supplying a relatively large portion of myocardium. In ischemic regions of moderate size the ballooning may come and go.

Conditions which increase the work of the heart or those which render the collateral blood supply less effective, such as shock and reduced blood pressure, may cause the onset of ballooning in an ischemic region of mycardium which previously contracted. Clinically, when shock occurs after a coronary occlusion, the markedly reduced blood pressure may embarrass the entire coronary blood supply sufficiently to cause a relative ischemia of myocardium uninvolved by the occlusion and possible extension of noncontractility to previously normal myocardium. Such an event might constitute a cause of sudden death in coronary occlusion complicated by severe shock.

By means of roentgenkymograms of the heart, noncontractility of ischemic myocardium in man has been used clinically in the diagnosis of coronary occlusion as well as coronary insufficiency. Though not conclusive in many cases, it is particularly valuable if it appears in suspicious cases in which electrocardiographic changes are delayed or absent, since it usually appears early in coronary occlusion.

Shock

The profound systemic effects of all types of shock are well known. However, despite the fact that patients with coronary occlusion who develop shock have a much poorer prognosis than those who do not, there has until recently been little or no attempt to treat this type of shock. It has been widely considered that the shock complicating coronary occlusion reduced the work of the heart and was therefore beneficial; but, in view of recent investigations, it becomes increasingly evident that the shock of coronary occlusion should be remedied promptly and effectively.

It has been shown that in shock the general coronary blood flow is greatly reduced, and also that because of the reduced pressure gradient through intercoronary anastomoses, the collateral blood flow to regions of myocardium made ischemic by ligation of coronary arteries is even more markedly decreased.[12,13] In the experimental animal with coronary occlusion and shock, the heart improves rapidly when the blood pressure is elevated.[12]

Obviously then, aside from the severe and frequently irreversible systemic changes which result from prolonged severe shock, conditions which allow anoxemia of the entire myocardium must be exceedingly detrimental and possibly fatal.

Clinically, the prompt and cautious treatment of shock associated with coronary occlusion may be a life-saving procedure in those cases in which the myocardial damage due to the original occlusion is not so extensive as to preclude recovery. Moreover, it cannot be shown that such therapy is harmful when it is applied judiciously and with caution. Many investigators have used whole blood and plasma transfusions to raise and maintain blood pressure.[12,14,15] Neosynephrine, epinephrine, caffeine, and coramine have also been used.[12] The pressor drugs are safer than transfusion in cases in which pulmonary edema develops.

Closely related to the effect of shock associated with coronary occlusion upon the myocardium is the effect of shock of extracardiac origin upon the myocardium in elderly patients with or without clinical evidence of myocardial disease. The incidence of coronary arteriosclerosis of variable extent is widespread in older age groups and constitutes a basis for potential myocardial ischemia

alleviated under normal conditions by the gradual enlargement of intercoronary arterial anastomoses. The sudden reduction of blood pressure to shock level in these individuals may be accompanied by electrocardiographic changes indicative of severe coronary insufficiency.[16] With adequate transfusion the electrocardiogram returns to normal.[15] These electrocardiographic changes are substantiated by experimental evidence of reduced coronary blood flow in dogs with partial coronary occlusions simulating coronary sclerosis who are subjected to shock. The evidence of insufficient corronary blood flow in these animals disappears after transfusion.[12]

Thus it is of great importance to correct not only the severe hypotension associated with coronary occlusion, but also to prevent as well as correct, when necessary, that occurring in patients who are likely to develop coronary insufficiency because of underlying coronary sclerosis.

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The Treatment of Syphilis

Katherine H. Mac Eachern, M.D.

WITH THE ADVENT of penicillin the treatment of syphilis has been revolutionized. In December 1943, Mahoney, Arnold, and Harris first reported successful results in treating early (primary) syphilis with penicillin.[1] Following that report a large scale, well co-ordinated investigative program was initiated in this country to determine the most effective methods of utilizing the new drug in the treatment of syphilis. Through the co-operation of the Army, Navy, and United States Public Health installations, civilian clinics, and experimental laboratories, studies were started, and results were reported, pooled, and statistically analyzed. By this method volumes of clinical and experimental data have been collected and evaluated in a relatively short period of time.

The first studies were complicated by the fact that amphorous penicillin of unknown composition was used. As the several penicillin fractions were isolated it was found that penicillin G was the most efficacious against T. pallidum in vitro. With the development of crystalline penicillin G it was possible to confirm its superiority clinically.[2]

When penicillin first became available for antisyphilitic treatment it was used in aqueous or saline solutions. To insure continuous therapeutic activity it was necessary to give individual injections every 2 to 6 hours, necessitating hospitalization of patients. The introduction of penicillin in oil and beeswax (POB)[3] did away with the necessity of multiple daily injections and provided adequate therapy on an ambulatory basis with but one or two daily injections. More recently preparations of insoluble salts of penicillin and improved repository vehicles which are even more slowly absorbed and excreted are under investigation. One of these, procaine penicillin in oil with 2 percent aluminum monostearate, has now been substituted for POB in the treatment of syphilis. This preparation will give a demonstrable blood level for 4 days following a single injection of 300,000 units[4] and has the additional advantage of not causing painful local reactions. It is currently being evaluated in doses of 1.2 million units (4 cc.) in one depot, 2.4 million units (8 cc.) in one depot, and 2.4 million units in two depots (each 4 cc.).

One of the most remarkable attributes of penicillin is its lack of toxicity. After five years of widespread use there has been no reported fatality. Allergic dermatitides, most often urticaria, is the common untoward reaction and can be readily controlled by any anti-histaminic drug. Jarisch-Herxheimer reactions occur in about half of early cases treated with penicillin.[6] These consist of fever and transitory intensification of the chancre or secondary manifestations which are of little concern. However, intensification of the tissue reaction in late syphilis is of the utmost concern and the same care in preventing it must be exercised as with heavy metal therapy.

Although there is as yet no unanimity of opinion on all details of syphilis management, there is a universal acceptance that penicillin has proved highly effective in all manifestations of syphilis. Penicillin has reduced the hazards associated with heavy metal therapy. It has shortened the duration of treatment and has thereby increased the number of patients who complete the prescribed course. It has stimulated investigations on the biology of syphilitic infection, especially the biologic factors responsible for relapse and reinfection.[7] Further time must elapse before it can be determined what will be the ultimate in the prevention and treatment of syphilis.

It is the purpose of this paper to review briefly the available data and recommend treatment as it is today.

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Early Syphilis

From the cumulative reports of the co-operative study groups the following recomendations are made:

1. Crystalline penicillin G is to be used exclusively.

2. Total dosage for an individual course should not be less than 4.8 million units.

(a) If aqueous solutions are used, individual injections should be given every 2 to 4 hours. (e.g., 50,000 units every 2 hours for 96 injections in 8 days, or 100,000 units every 4 hours for 48 injections.)

(b) If POB is used, daily injections of 300,000 units for sixteen days.

(c) If in oil and 2 percent aluminum monostearate, 600,000 units three times a week for 3 weeks.[5,9]

3. The intramuscular route is the only method of administration. Patients should be closely observed for a period of 3 years. Relapses or treatment failures usually manifest themselves between the fourth and ninth month following treatment. They may occur as (1) seroresistance; (2) serologic relapse; (3) clinical relapse; (4) abnormal spinal fluid findings.

It is important that serologic follow-up be by quantitative tests. Only by this method can the reagin titer be accurately determined and followed. There are several factors to be considered in the evaluation of a quantitative test.[10]

1. Reagin titers are comparable only when performed by the same laboratory and by the same technique.

2. In the same laboratory the results may be modified by day to day variations in the sensitivity of the test.

3. The reagin titer of the blood is not necessarily an expression of the severity of the syphilitic infection.

Quantitative serologic tests should be performed monthly for the first year, every 3 months for the second year, and every 6 months for the third year. On the average there is little change in the reagin titer for about 2 weeks after treatment. Approximately 75 percent of successfully treated patients become seronegative within 6 months while the remaining 25 percent (of the successfully treated cases) will have a low reagin titer after six months.[11] A case is considered seroresistant if, ten to twelve months after treatment, the reagin titer is still high. A serologic relapse consists of a steadily increasing blood serologic titer subsequent to a significant decrease in the titer. It is necessary to confirm this by at least two tests because of the aforementioned reasons. A serologic relapse can be noted a few days to months before the appearance of a clinical relapse. The patient should be carefully examined at the monthly visits for skin or mucous membrane lesions. A spinal fluid examination is indicated 6 months after treatment, special note being taken of the cell count and protein content, as they may be the only abnormalities.

Treatment failures require immediate retreatment as soon as this diagnosis is established. A total dosage of 6 million units in not less than 15 days is recommended for a first failure. For a second failure 9 million units over a period of 21 days is recommended. The addition of arsenicals or bismuth is not considered to be advantageous.[11] The follow-up regimen in retreated cases is the same as outlined for initial treatment.

Latent Syphilis

Time has been too short to produce any significant data in the use of penicillin in the treatment of latent syphilis. It is difficult to evaluate the effectiveness of treatment as the blood serologic test may not become negative for years after successful antisyphilitic treatment and as yet the significance of a persistently positive low titer serologic test is not known. However, since penicillin is effective in all other types of syphilis it can be expected to be effective in latent syphilis.

The recommended dosage in latent syphilis is 4 to 6 million units given in not less than 2 to 3 weeks. In the follow-up care, quantitative serologic tests should be obtained at regular intervals, but can be less frequent than in early syphilis. As long as the serologic titer remains low, further treatment is not indicated. To institute retreatment in the desire to reverse the serologic test to negativity is highly inadvisable. Spinal fluid examination and a fluoroscopic examination of the heart and large vessels should be obtained in every case of a sustained rise in reagin titer.

Neurosyphilis

Penicillin is efficacious in all forms of neurosyphilis. It appears to be a method of therapy superior to any other, including malaria. Penicillin alone is the treatment of choice in asymptomatic neurosyphilis, meningovascular syphilis, and tabes dorsalis.[12,13] Only in the treatment of dementia paralytica is there a divergence of opinion as to the efficacy of penicillin alone or combined with malaria.[12,14] Penicillin causes an improvement in the signs and symptoms in the majority of cases and is remarkably effective in improving the spinal fluid abnormalities.[13]

The proper evaluation of therapeutic success or failure in neurosyphilis is based on the spinal fluid findings.[15] The cell count and protein content are the most labile of the spinal fluid syndrome. They are the first abnormalities to appear with involvement of the nervous system and the first to return to normal following treatment, and therefore are an accurate index to syphilitic activity within the nervous system.

Initially, 9 million units over a period of 15 days is recommended as adequate therapy. Hospitalized patients receive 40,000 to 80,000 units of penicillin G in aqueous solutions every 2 to 4 hours. Ambulatory patients receive 600,000 units of delayed penicillin daily for the first six injections and tri-weekly thereafter to completion. Follow-up care consists of adequate spinal fluid examinations. These should be performed every 6 months for the first 2 years after treatment, and yearly thereafter. Indications of treatment failure and need for retreatment appear as: (1) failure of cell count and/or protein content to become normal 6 months after treatment; (2) abnormal cell count and protein content at any of the periodic examinations after having been normal (relapse); (3) clinical progressions. The Wassermann and colloidal gold tests may remain positive for years after treatment and are in themselves not an indication of treatment failure. Retreatment consists of 9 or 12 million units given over a period of 15 to 21 days. Several such courses may be necessary before the syphilitic process is arrested, as indicated by normal cell count and protein content.[15]

Prenatal Syphilis

Penicillin is incomparably superior to any previous drug in the prevention of prenatal syphilis. Studies to date show that antepartum treatment of a woman with symptomatic early syphilis is almost 100 percent effective in the prevention of congenital syphilis.[16] It is to be noted that small amounts of penicillin, insufficient to cure the maternal syphilis, have resulted in the birth of a normal infant.[17] Experience with the recent preparation of penicillin has indicated that the earlier fears of the abortifacient effect of penicillin are groundless.[18] It is not necessary to retreat every patient during a subsequent pregnancy. If the patient has had adequate antisyphilitic therapy prior to conception, and there are no active clinical or serologic signs of syphilis retreatment is not warranted.[19]

Penicillin is effective in curing the new born syphilitic infant if it is not in a too debilitated state. Recommended dosage is 100,000 units per pound of body weight. This is given intramuscularly in aqueous solution every 3 hours over a period of 15 days in 120 injections.[15] Once treatment is completed periodic observation of the infant every 1 to 3 months is indicated. Clinical relapse is uncommon, being approximately 5 percent.

In late congenital syphilis the tendency is to give a high total dosage, comparable to those schedules employed in the treatment of adult acquired syphilis. As penicillin does not exert an immediate favorable effect on active interstitial keratitis, fever therapy remains the treatment of choice.[20] However, penicillin is employed concomitantly to adequate total dosage.

Late Symptomatic Syphilis

In benign late symptomatic syphilis (i.e. skin, muscle, or bone gummata) the results following a single course of 9 million units of penicillin alone gives satisfactory results in about 90 percent of the cases.[21] Healing usually occurs in shorter time than with previous chemotherapy. Gummatous visceral syphilis responds promptly to penicillin, and the treatment is superior to older methods in that it is brief and nontoxic. Recommended dosage is 9 million units of delayed penicillin over a period of 21 days. However, in visceral and cardiovascular syphilis the treatment must be individualized. The important consideration is the avoidance of the Jarisch-Herxheimer reaction. This can be accomplished by beginning treatment with ten to twelve injections of bismuth followed by 9 million units of penicillin. The usual supportive medical regimens are carried out concomitantly with the administration of penicillin therapy.

Summary

1. A review of the current literature on the penicillin treatment of syphilis is presented.

2. Penicillin G is the most effective antisyphilitic drug thus far discovered.

3. Accepted treatment schedules for the various manifestations of syphilis are given.

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Neonatal Death and Stillbirth

as Seen by the Medical Examiner

At the November 16, 1949, meeting of The Committee on Infant Mortality held at the Academy of Medicine, New York, Dr. Jacob Werne stressed the importance of autopsies in infants under one year of age.

Cases seen by the medical examiner are mainly sudden deaths in the postnatal period. He must determine whether the child was a live or stillbirth, the maturity of the child, how long it had been dead, as well as the cause of death. In the past the majority of these cases have been diagnosed as status lymphaticus. Since 1931 this diagnosis has been discarded as incorrect and there has been a tendency to attribute the deaths to mechanical suffocation.

Dr. Werne pointed out that an autopsy the microscopical findings in most of these cases show congestion of the lungs, injury to the bronchial epithelium, edema and necrosis of the epithelium. They should be diagnosed as non-specific bronchitis, peribronchitis, and interstitial pneumonitis. These changes were demonstrated by microscopic sections and contrasted with the sections taken from known cases of mechanical suffocation.

The absence of a history of symptoms, he believes, can be explained in two ways. First, that the shock of sudden death is so great that the family is unable to recall any signs which might indicate evidence of infection and secondly, that death occurs before symptoms are more than minimal.

—*Reported by* Elise Renning, M.D.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

EDITORIAL SECTION

HEART DISEASE: NUMBER ONE HEALTH PROBLEM

DURING THIS ENTIRE MONTH attention of the country has been focussed upon the challenge presented by diseases of the heart. The magnitude of the problem to be faced is evidenced by the fact that this group of diseases causes three times as many deaths as cancer, six times as many as accidents, seven times as many as kidney disease, nine times as many as pneumonia, and ten times as many as tuberculosis. Heart disease tops the combined toll taken by these other leading causes of death. And, in addition, diseases of the heart and blood vessels take a heavy toll in sickness and disability. It is estimated that more than 152,000,000 work days, equalling billions of dollars in productivity, are lost each year from this cause. The economic cost, therefore, in terms of loss of life, loss of gainful employment, and expense of care and treatment, is staggering.

It is true that during the past few years phenomenal progress has been made in the field of medicine and related sciences; but many problems still remain to be solved, and, of these, many relate to heart disease. We have yet to learn the secrets of rheumatic fever, of arteriosclerosis, and of hypertension, the three causes of heart disease now presenting the major problem. Research into their fundamental nature is the most important weapon in the campaign. Methods for cure and for prevention will follow. Dr. Marvin, President of the American Heart Association, tells us: "If this country is to make any significant advance in conquering its leading cause of death, it must be through wide, intensive, prolonged research by competent investigators who can devote all their time and energies to the task."

Growing interest and concern of the government in this major health problem is reflected in establishment by Act of Congress of the National Heart Institute in the United States Public Health Service. Further proof that the magnitude of the problem is being recognized is shown by the major research program sponsored by the Life Insurance Medical Research Fund. The American Heart Association has taken cognizance of the importance of research and in its program a large proportion of its funds has been marked for grants for investigation in diseases of the heart. Other objectives of the Association are reference and information services, directory of community services, and educational programs for physicians, nurses, social workers, and teachers, in order to insure better treatment, better care, and earlier discovery of cardiac cases. All physicians will be interested in the success of the present campaign of the American Heart Association to raise funds whereby these objectives may be accomplished.

—A.C.R.

CORRECTION—DECEMBER JOURNAL

There is a typographical error in the first line of page 534. This should read, "*required laparotomy,* and removal of the left intraligamentary cyst." The correction is in italics.

The title page is in the wrong position. It has been placed between pages 542 and 543, whereas it should have been inserted between pages 544 and 545. Nothing has been omitted from the reverse of the title page; this was intended to be blank. If you have your volumes bound, cut out the title page and your bookbinder can tip it in where it belongs; otherwise, you may tear the title page out without injuring the rest of the JOURNAL.—Ed.

Maude Abbott, 1869-1940

HER CONTRIBUTION TO CARDIOLOGY

Edna Guest, O.B.E., M.D.

"WHAT THEN do these men not owe to him who gathers up their works, and in so doing recalls their achievements, and thus labors to lift the icy pall of oblivion which descends on everything human" —John Ferguson, Bibliotheca Chemica, 1906.*

The aptness of the above quotation is brought home to us as we glance over the bibliography of Dr. Maude Abbott's publications and realize the herculanean tasks she set for herself, and the high standard of work she demanded of herself.

We find that, in 1899, the *Montreal Medical Journal* (XVIII, 1-13) published the first recorded article by Dr. Abbott on "So Called Heart Murmurs." This paper was based on a five-year review of the Royal Victoria Hospital records that the Dean had invited her to make from the date the hospital opened, in 1894, to 1899. At this time Dr. Abbott had no hospital appointment, and women were not admitted to membership in the Medico-Chirurgical Society, however, one of the men members, Dr. James Stewart, recognized the value of her paper and read it before the Society; it was then accepted by the *Medical Journal*. Dr. Abbott told me later that this paper opened the doors of the Society to women. At the close of the discussion on her paper, her name was proposed for membership and was carried, with one member only voting against it.

Forty-one years later, the year of her death, 1940, we find Dr. Abbott still writing about hearts! In Stroud's "Diagnosis and Treatment of Cardiovascular Disease," she contributed "Congenital Cardiac Abnormalities," with all the crypt unharried and unhurried detail which was characteristic of her.

What of her contribution to cardiology in these intervening years?

In 1899, Dr. Abbott was appointed to the curatorship of McGill's Medical Museum. With this appointment, the door of her life's work opened and she walked happily through. In particular she fell heir to Osler's great assemblage of fairly well labeled, but completely unorganized and uncatalogued, pathological specimens. These had been collected by him from some 750 autopsies he had performed at the Montreal General Hospital during his years from 1869 to 1884 at McGill University. In this Museum, Dr. Abbott found sufficient challenge to satisfy her fermentingly restless and brilliant mind for her whole lifetime, and it was here that she became particularly interested in cardiology. She also became deeply impressed with the value to students of correlating clinical and pathological teaching. Dr. Martin, Dean of McGill, has said, "It was she, and she alone, who fostered the closer correlation of the Museum with the clinician—and the whole teaching staff became Museum-conscious."

In 1905 Sir William Osler invited Dr. Abbott to write a section on congenital cardiac disease for his new "System of Modern Medicine." This she set herself studiously to do and, after two years

* Quoted by Maude Abbott in Classif. Bibliog. of Sir Wm. Osler's Publications, 1939.

of intensive statistical review, sent her monograph to him. In return she received a very generous letter saying: ". . . I knew you could write a good article but I did not expect one of such extraordinary merit. It is by far and away the very best thing ever written on the subject in English—possibly any language." This monograph was included in Osler's new "System" in 1908, revised in the second edition in 1915, and in the third edition in 1927.

MAUDE ABBOTT, M.D., F.R.C.P.(C), L.L.D.

Dr. Abbott continued to contribute articles on congenital heart disease consistently in system-monographs and in periodicals, from the date of her first great startling musuem discovery: the now famous "three-chambered adult heart" found by Dr. Andrew Holmes, first Dean of McGill, in an autopsy performed by him in Montreal in 1823 and reported in Edinburgh Transactions in 1824. This specimen was of great interest to members of the International Society of Medical Museums, an association which she formed after years of effort and with the support and friendly collaboration of Major Carroll of Washington.

In 1934 after many years of painstaking work Dr. Abbott assembled an exhibit demonstrating congenital cardiac disease that attracted much attention in London at the Centennial Meeting of the British Medical Association. In 1935 this exhibit was reassembled in Atlantic City for the joint meeting of the American and Canadian Medical Associations and was received with equal enthusiasm. The assembling of this exhibit was undertaken partially as a preliminary study in the preparation of a textbook on congenital cardiac disease she planned to write, and it was her greatest professional satisfaction when the American Heart Association made possible the publication, in 1936, of the "Atlas of Congenital Cardiac Disease," demonstrating in permanent accessible form this comprehensive study. This work has been referred to many as her magnum opus.

One cannot but feel that since her textbook was in its very embryonic state when her driving power was cut off, this Atlas must have been a happy memory as the lights dimmed and she became detached on that peaceful September day in 1940.

Maude Abbott was born on March 18, 1869, at St. Andrews East Quebec. Her grandfather was the Rev. William Abbott, Rector of that parish and brother of the Rev. Joseph Abbott, first bursar of McGill University. She received her B.A. from McGill University in 1890, Valedictorian of her class, and was awarded the Lord Stanley Gold Medal. On being refused admission to McGill, she entered Bishop's College from which she graduated as Doctor of Medicine in 1894. In 1928 McGill University bestowed upon her an Honorary M.D. degree and, in 1936, an L.L.D. degree. She died in Montreal, September 2, 1940.

THE PROBLEM CLINIC

QUESTION: How does one get started in private practice?

ANSWER: Establishing a Private Practice

Connie M. Guion, M.D.

I. THE OFFICE

WHAT WILL COME after your intern days under the guidance of academic medicine in a modern hospital? So far you have had no problems about the mechanics of your professional life. You have been provided with patients, nurses, instruments, a well equipped laboratory, routine procedures, consultants, hospital beds, an office, the protection of the hospital's name, all without expense to you. Now your formal preparation is over and life's problems begin in earnest. For 15 years and more you have spent dollars for training; now you must capitalize on this experience. What will bring you the most satisfaction in terms of happiness and success? Let us suppose it is private practice. How shall you begin?

First, you must investigate the communities in which you are interested and select the one in which there is a real opportunity for success. The ideal arrangement would be for you to become associated with an established practitioner or a group of doctors who are connected with a modern hospital and through whom you may obtain an appointment.

If you decide on such a plan, make a detailed, written agreement specifically enumerating your duties in terms of hours, days, vacations; your office and outside duties; your hospital connections; your financial liabilities and returns for office work, calls, rent, laboratory, and car; your opportunities for individual work and development; and duration of contract. The document should be written by an impartial lawyer, properly witnessed, etc. Such a legal paper is not only a protection, but it prevents misunderstanding and loss of friends. You should be covered by insurance for health, accident, fire, and malpractice. If you are responsible for workers, you should procure proper inusurance for each.

If you are to work alone, your first consideration is to select an office easily accessible to your future clientele. It need be neither expensive nor expansive, but the floor space must be adaptable to your needs.

Ideally, an office should provide rooms, not necessarily large ones, for: waiting; consultation; examining; fluoroscope; laboratory; toilet; secretary, files, typing, etc. The arrangement of the rooms should allow a minimum of traffic through the office and a maximum of privacy. This will save the time of all concerned.

It is surprising the effect that an office has on a patient. The atmosphere of your waiting room and the courtesy of your secretary can be big assets. The waiting room should be full of light and sunshine, if possible; it should be inviting, simple, conducive to relaxation, and free from any taint of professionalism. The lighting should afford proper illumination for comfortable reading. The magazines and books should provide interesting reading and pictures of current date, or else antiques beyond the memory of the readers.

Dr Guion is Professor of Clinical Medicine, Cornell University Medical College; Attending Physician and Chief of General Medical Clinic, New York Hospital.

Chairs should be comfortable, free from as much cloth as possible or protected by washable covers. A long narrow table for the reading material and a vase of flowers will add to its beauty. The pictures should be colorful and restful and in keeping with the rest of the room.

In short, the waiting room must have such an air of welcome, simplicity, and comfort that waiting will be a rest. If you do not possess the gift of creating this atmosphere, buy it from one who has. The cost will be negligible compared with the returns from the happy impression made on your patients.

The consultation room should follow the pattern set in the sitting room. It is essential that the surroundings give the patient a sense of ease and friendliness which will establish a confidential rapport between the doctor and patient.

The remainder of the office must have a professional bearing, convenient and well equipped for whatever work you are to undertake. The secretary's office should be near the front entrance, so that patients will receive personal attention immediately on entering. Her desk, books, and files should be so located that they may be kept private.

The examining room should contain an examining table, stable, easily mounted, and covered with a foam rubber cushion; a small table or shelf beside the examining table, to hold needed instruments; sheets, gowns, towels, etc.; a good spotlight for local examinations; one straight chair, and one stool for the patient; shelves or a cabinet, to be stocked with:

(a) Alcohol, 70%; antihistaminase nasal solution; argyrol, 10%; aromatic spirits of ammonia; aspirin; nitroglycerine, hypodermic tablets, gr.1/100 (0.006 Gm.); ophthalmic butyn or pontocaine solution; ophthalmic neosynephrin solution, 10%; tincture iodine; tincture merthiolate, 1:1,000.

(b) Instruments: Auroscope; ophthalmoscope; sigmoidoscope; sphygmomanometer; stethoscope; vaginal specula (virginal and medium sizes); forceps; reflex hammer; scissors; syringe, 2 cc., and needles, sterile; thermometer; tongue depressors and applicators; tuning fork; adhesive tape; bandages, bandaids, cotton, sterile pads; gloves; paper handkerchiefs; K-Y jelly.

The fluoroscope is best placed in a small separate room, properly protected with lead lining. If there is a window, that must be covered with a heavy black shade to exclude all light. A rubber apron and gloves will be needed for the protection of the examiner. Other examinations, as of the eyes, sinuses, and breasts, can also be made here. If the fluoroscope is in the examining room, then that must be equipped with black shades that run in properly constructed slips so that all light is excluded.

It is essential that every doctor be prepared to carry out simple laboratory tests necessary for emergency occasions. It is very rewarding for the young practitioner who is not busy and for the patients of limited means, because it will provide diagnostic facilities within their scope. A small laboratory is practical for every doctor with modern training. It does not require an expensive outlay on a large scale, even a bathroom may be adapted for its use. Here you may do routine blood counts, urine and fecal anaylses, smears, sedimentation rates, make cultures, etc.

It is equally as important that you do not attempt to perform any test that you cannot do accurately or that you may have done more reasonably and competently by a commercial laboratory or hospital.

The essential equipment includes a flat surface properly prepared to be chemical resistant (You can easily treat wood as described in laboratory manuals); shelves similarly treated; chemicals necessary for analyses planned; microscope, cover, table with a drawer to hold lens, paper, counting chamber, slides, cover slips; stools; test-tube rack; Bunsen burner, alcohol lamp, or electric plate; centrifuge and block; sterilizing pan; sink with combined hot and cold water faucet fitted with suction pump (Dilute all chemicals before dumping in sink to protect plumbing); glassware, including: 12 test-tubes, a set of beakers, glass tubes and rods, measuring pipettes and glasses, Wassermann tubes, funnels and filter paper, counting chamber, red and white blood and hemoglobin pipettes, glass dish for staining slides, Sahli hemoglobinometer, slides and cover slips, specific gravity set, sedimentation tubes; syringes: 2, 5, 10, and 50 cc., 1 cc. tuberculin and asepto 50 cc.; needles, no. 27, 26, 22, 20, 18, ¾, 1 and 1½ inch long; and needles and syringes for lumbar puncture, thoracentesis (with stop cock), and abdominal paracentesis.

If you are prepared to carry out simple blood chemistry analyses, they can be done in small space with very little extra equipment. A simple colorimeter is now available with which you can determine the values of blood sugar, urea, uric acid, cholesterol.

The equipment which you will need when making house calls will be considered next month.

BOOK NOTICES

GERIATRIC MEDICINE: Diagnosis and Management of Disease in the Aging and in the Aged. Edited by Edward J. Stieglitz, M.S., M.D., F.A.C.P., Consultant in Gerontology, National Institute of Health; Visiting Physician, Medical Service, Baltimore City Hospitals; Attending Physician, Washington Home for Incurables, Washington, D. C. Foreword by Dr. Lewellys Barker, Pp. 887. Illustrated. W. B. Saunders. 1943, 1944.

In this volume orderly chapters deal with changes which occur normally and abnormally in the various systems of the body with the aging process. At the start are general considerations of physiologic, anatomic, mental, and other aspects of normal aging. Sections on specific diseases follow. It is stressed that chronic progressive diseases of old age begin in middle life and that preventive measures in the aging are as important as palliation in the aged.

Among the fifty-four contributors, representing the several fields of medicine and various medical centers, are: Dr. J. Burns Amberson, Dr. Anton Carleson, Dr. Chester Keefer, Dr. Robert Linton, Dr. Winfred Overholser, Dr. John Peters, Dr. Isidor Ravdin, and Dr. Irving Wright.

While of help as a reference book, the chief value of this volume lies in "background reading," general and specific, for those who are caring for the aging and the aged.

—Elisabeth C. Adams, M.D.

SYNOPSIS OF PSYCHOSOMATIC DIAGNOSIS AND TREATMENT. By Flanders Dunbar, M.D., Ph.D., D.D. Price $6.50. Pp. 501. Illus. C. V. Mosby Company, St. Louis, 1948.

In contrast to her pioneer book of 1943, only some of the chapters are by the author herself. The important chapter dealing with the gastrointestinal system is by S. Rubin. Robert C. Lowe writes about the metabolic and endocrine disturbances; Jacob Arlow about rheumatoid arthritis. Bertram Levin deals with the "Neuroses and their accompaniment in physical dysfunction."

This book is a worthwhile addition to Dunbar's earlier book, as it comprises several disease entities not treated in the former. But like any symposium, it lacks cohesion, and the chapters are of different value.

The work is intended as a guidebook for the general practitioner, to help him with those baffling problems that do not respond satisfactorily to the customary methods of treatment. It does not make easy reading, especially for the not-psychoanalytically-trained physician. But it will be most valuable as a reference book. It fulfills this purpose very well also because of its extensive quotations from literature and the bibliography given for each chapter.

—Erna D. Ball, M.D.

McLESTER'S NUTRITION AND DIET IN HEALTH AND DISEASE. By James S. McLester, Professor of Medicine, University of Alabama. Price, $9.00. Pp. 800. W. B. Saunders Company, Philadelphia, 1949.

For many years the various editions of this book by Dr. James S. McLester have been a most useful and complete reference in the field of nutrition. The fifth edition includes much of the newer knowledge of nutrition accumulated through the war years and retains the excellent presentation of former editions.

The scope of the book is so wide that certain sections, of necessity, must be brief summaries only. A well chosen bibliography effectively supplements each chapter and gives source materials for each important point mentioned in the text.

The basic principles of nutrition are summarized in some one hundred and fifty-seven pages with about half that space in addition given to a survey of food products. New material from research of the past several years has been added to the section on protein, vitamins and minerals.

The last two-thirds of the book contain a detailed discussion of diet in health and disease. Menus, food tables, some of which are new, and plans for special diets add much to the practicality of this section. The chapters on "Feeding of Infants," "Nutrition in Industry," and "Feeding of Surgical Patients," by specialists in those fields, are valuable contributions to nutritional knowledge.

The appendix gives useful information on special methods of feeding, cookery, dietary requirements, and numerous tables of food values.

This helpful volume should be conveniently at hand for all physicians interested in diet (and all physicians should be!). Doctor McLester has done much to fix the attention of the doctor on the importance of nutrition and to make available to him in convenient form an amazing collection of facts.

—Marion Fay, Ph.D.

CLINICAL AUSCULTATION OF THE HEART. By Samuel A. Levine, Clinical Professor of Medicine, Harvard Medical School, Physician, Peter Bent Brigham Hospital, and W. Proctor Harvey, M.D., Research Fellow in Medicine, Harvard Medical School, Assistant in Medicine, Peter Bent Brigham Hospital. Price, $6.50. Pp. 364. Illustrated. W. B. Saunders Company, Philadelphia and London, 1949.

While auscultation of the heart has been practiced for the past 130 years, development of more elaborate and expensive instrumental aids to diagnosis during the present century has resulted in neglect of this simpler method. As its title indicates, this new text by Levine and Harvey discusses heart sounds and murmurs that one can readily hear. It discusses what deductions may be made from changes in the character of the sounds, how the various cardiac arrhythmias may be recognized at the bedside, the meaning of different murmurs, and the clinical significance of other findings brought out by careful auscultation.

The book is well illustrated, the style is pleasing, and the authors have presented their material in a manner that can be readily understood. Questions which perplex the undergraduate student are answered. At a time when a variety of new laboratory and roentgen methods hold the center of the stage in the rapidly advancing specialty of cardiology, a volume of this kind emphasizing the value of careful auscultation in the diagnosis and treatment of cardiac disorders is most welcome.

—William G. Leaman, Jr., M.D.

(Editor's Note: A number of books of practical interest have reached our desk these past months. We find the following of sufficient value to recommend them to our readers.)

MEDICAL WRITING. THE TECHNIC AND ART. By Morris Fishbein, M.D., Editor, The Journal of the American Medical Association. With the assistance of Jewel F. Whelan, Assistant to the Editor. 2d edition. 292 pp. 36 illustrations. Price $4.00. Philadelphia and Toronto, The Blakiston Company, 1948.

In this small book are encompassed the essential details concerned with the preparation of a medical article for publication from the time the idea is formulated in the mind of the author, through the various stages of production, including illustrations, charts, and tables, and proofreading, until final publication. Certainly this editor's life would be a far happier one if all contributors to the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION possessed Dr. Fishbein's book and followed its directions when submitting manuscripts.

HOW TO BECOME A DOCTOR. By George R. Moon, A.B., M.A., Examiner and Recorder, University of Illinois College of Medicine, Dentistry and Pharmacy. 131 pp. Illustrated. Price $2.00. The Blakiston Company, Philadelphia and Toronto, 1949.

A practical handbook of information for students who intend to study medicine in any of its various fields: medicine, dentistry, veterinary medicine, optometry, chiropody, occupational therapy, hospital administration, medical illustration, science, and so forth. This book is of great value to advisers at the student level. We thought the chapter on "Women and the Study of Medicine" gave a very fair appraisal of this problem.

CLINICAL CASE-TAKING. By George R. Herrmann, M.D., Ph.D., Professor of Medicine, University of Texas. 4th edition. Price $3.50. 240 pp. C. V. Mosby Company, St. Louis, 1949.

This is an outline of a logical, systematic history-taking and physical examination of the patient, very significant in these days when a diagnosis is more apt to be made in the laboratory than at the bedside. The significance of personality functions as motivating factors in psychosomatic disorders is pointed out but is considered as part of the thorough history-taking, which includes an analysis of the type of human being of the individual patient. It is very important that this step by step procedure in the study of a patient's illness be learned early by the future physician. This treatise should be a guide to the student of medicine as soon as he comes in contact with the patient.

BLAKISTON'S NEW GOULD MEDICAL DICTIONARY. Edited by Harold Wellington Jones, M.D., Colonel, U. S. Army, retired; Normand L. Hoerr, M.D., Ph.D., Professor of Anatomy, School of Medicine, Western Reserve University; and Arthur Osol, Ph.D., Professor of Chemistry, Philadelphia College of Pharmacy and Science. 1st edition. 1294 pp. 252 illustrations, 129 in color. Price, textbook edition, $8.50. The Blakiston Company, Philadelphia and Toronto, 1949.

This is an accurate and authoritative dictionary, written by distinguished contributors in the various fields of medicine, public health, and related sciences.

THE BUSINESS SIDE OF MEDICAL PRACTICE. By Theodore Wiprud, Executive Director and Secretary of the Medical Society of the District of Columbia. 2d edition. 232 pp. 22 fig. Price $3.50. W. B. Saunders Company, Philadelphia and London, 1949.

The various business aspects of medical practice are here considered: the beginnings of practice, keeping records, medico-legal problems, publications, group medical practice, public relations, and all the other problems with which the physician is concerned.

CURRENT THERAPY 1949: Latest Approved Methods of Treatment for the Practicing Physician. Howard F. Conn, M.D., editor. M. Edward Davis, Vincent J. Derbes, Garfield G. Duncan, Hugh J. Jewett, William J. Kerr, Perrin H. Long, H. Houston Merritt, Paul A. O'Leary, Walter L. Palmer, Hobart A. Reimann. Cyrus C. Sturgis, Robert H. Williams, consulting editors. 672 pp. Price $10.00. W. B. Saunders Company, Philadelphia and London, 1949.

The medical and surgical treatment of those diseases which occur most commonly in medical practice are outlined by distinguished contributors, experts in their various fields. Conflicting opinions are given, which demonstrates that no outline of treatment can be accepted dogmatically, but that individual variations and eccentricities must be considered.

MEDICINE OF THE YEAR, 1949. Under the editorial direction of John B. Youmans, M.D., Dean, College of Medicine, University of Illinois. 143 pp. Price $5.00. J. B. Lippincott Company, Philadelphia, London, Montreal, 1949.

A distinguished group of 23 clinicians and teachers analyze the year's advances in their respective fields and adapt their findings to the needs of the general practitioner.

GERMAN - ENGLISH MEDICAL DICTIONARY. Compiled by F. S. Schoenewald, M.D., Berlin, 241 pp. Price $8.50. The Blakiston Company, Philadelphia and Toronto, 1949.

This dictionary was begun by Dr. Schoenewald while a resident in England following his escape from Nazi Germany. After his death the editing was completed by his son-in-law, Dr. Alfred Schweitzer, bilingual in English and German, so that a full idiomatic correlation of English and German terms has been effected.

A.M.A. INTERNS' MANUAL. 201 pp. Price $2.25. W. B. Saunders Company, Philadelphia and London, 1948.

This valuable handbook for the use of interns, first published in 1932, is presented in new format. The therapeutic arrangement of drugs is changed to an alphabetic set-up. Each of the departments has been contributed by the respective Committee of the A.M.A. dealing with that subject. Previous discussions have been revised, so that all information in this volume is up-to-date. In the past the volume has been most helpful to interns presented with the problems of hospital practice, and the present volume, revised as of 1949 thinking, should be as valuable as its predecessors.

MARIHUANA IN LATIN AMERICA: The threat it Constitutes. By Pablo Osvaldo Wolff, M.D., Ph.D., M.A., Member of Expert Committee on Habit Forming Drugs of the World Health Organization. 56 pp. Price $1.50. Washington Institute of Medicine. The Linacre Press, Washington, D. C., 1949.

Dr. Wolff in this small volume has given a comprehensive view of the evils of marihuana, with a consideration of the relationship between marihuana, delinquency, and criminality. The case against marihuana has certainly been presented here in a forceful manner.

—ADA CHREE REID, M.D.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

ASSOCIATION NEWS AND ANNOUNCEMENTS

PRESIDENT'S MESSAGE

THIS ISSUE of the JOURNAL contains in "The Problem Clinic" an article of the deepest interest to residents and to those about to start private practice. I, therefore, call your attention to a letter I have just received from Dr. Mabel E. Gardner, Chairman of the Committee on Junior Branches and Associate Members:

"Having spent much of my time trying to aid women physicians, I have always felt that the beginning of a private practice is about the most important aspect of a physician's career. So much depends upon selection of the right community and the feeling of confidence inspired by the young physician among potential patients and their families that too much attention cannot be given the important details of proper procedure and equipment.

"Dr. Connie M. Guion, Professor of Clinical Medicine, Cornell University Medical College and Attending Physician and Chief of General Medical Clinic, New York Hospital, has, by request, prepared a timely and authoritative article on, 'Establishing a Private Practice.' Not only has Dr. Guion emphasized the importance of the right equipment but she has given excellent advice for providing the restful atmosphere which should surround the office.

"Now that the trend is again toward general practice which is so important in a vast country like the United States, opportunities are increasing for well-equipped young physicians with vision and determination to make for themselves an enviable professional reputation and a respected position in the community.

"While not everyone who has succeeded can review the equipment of her original venture and acknowledge so comprehensive a preparation, it is well for the young physician to make it as complete as possible.

"I urge each intern and resident to give the article her concentrated attention."

Dorothy Wells Atkinson

MIDYEAR BOARD MEETING

The following is a brief summary of actions taken at the midwinter Board meeting held at the El Dorado Guest Ranch, Tucson, Arizona, November 11 and 12, 1949.

President Dorothy Atkinson extended greetings and noted the absence of regional directors. Only one, Dr. Stenhouse, was present. Dr Atkinson advised that action be taken to stimulate a closer relationship between regional directors, branches, and the National Association.

Dr. Jessie Delprat, Chairman of the Credentials Committee, reported 26 officers and delegates entitled to vote, with 30 members in attendance. The Treasurer's report was accepted as read. After discussion by the Executive and other Committees, decisions were made on the following subjects:

Immediate financing of an executive secretary will be met by seeking contributions from individual members and branches. Dr. Atkinson announced that the San Francisco Branch, her own, was taking the lead by giving $100. Individual pledges, totaling over $800, were enthusiastically made by those present. A subsequent individual gift of $300 was received. It was emphasized that this was an emergency fund to be shared in by the JOURNAL and the Association to provide adequate personnel. The executive secretary's duties are to be outlined by the President with the advice of the Executive and Publication Committees.

The Board accepted, with thanks, the generous offer of Dr. Ada Chree Reid for temporary use of a room in her home, rent free, as the executive office.

It was voted to encourage branches to have the same fiscal year as the national, January to January, to facilitate payment of dues.

It was recommended that the membership card show: membership in the American Medical Women's Association; membership in the Medical Women's International Association; membership in the local branch, to be signed by the local treasurer; and subscription to the JOURNAL OF THE AMRICAN MEDICAL WOMEN'S ASOCIATION.

Rules for organization for junior branches were presented by Dr. Mabel Gardner and accepted. Her committee was empowered to organize these branches at once. It was voted that the Junior Membership Committee organize hospital preceptorships and carry out the "Students in Training" program where women's hospitals were available.

Dr. Leslie Kent, chairman of the Public Relations Committee, gave a vivid report of the recent session of the Public Relations Section of the American Medical Association. She pointed out that we should take an active interest in our county and state societies and actively participate in their fight against "the Welfare State." It was moved and seconded that the A. M. W. A. subscribe to the Shearon Medical Legislation Service.

It was voted that the Public Relations Committee obtain copies of all publicity sent out by committees of the A.M.W.A., review it, and make recommendations. This would apply to releases from the Committees of the American Women's Hospitals, Medical Women's Library, and the Woolley Memorial Fund.

In the field of public relations, an offer by Mrs. Fred McCormick of Tucson was discussed and tabled. This was an offer to give two $100 awards annually for five years to the man and woman physician who contributed most to world citizenship, with the stipulation that she select the first two to be offered the award.

Dr. Beulah Cushman and Dr. Occo Goodwin gave reports on the progress of their committees in developing better opportunities for medical education for women, particularly as related to postgraduate residencies in various specialties.

Dr. Ada Chree Reid was unanimously elected as our nominee for President of the Medical Women's International Association.

The sum of $771, previously voted for entertainment at the Amsterdam meeting, is to be divided among the European countries participating in the Congress at Philadelphia. This was to offset, in part, the problem presented by devaluation of their currencies. The desire was expressed that the hospitality shown our delegates abroad be cordially reciprocated.

Lack of coordination between branches and the national organization was deplored. It was voted that the second Vice-President have as a function indoctrination and guidance of the regional directors to obtain more active participation of branches in the national's affairs.

Announcement was made of a legacy of $500 from the estate of the late Kate C. Mead, the interest from which alone can be used. It was decided to allow it to accumulate before further disposition was decided upon.

It was voted that a balance of $1000 be maintained in the scholarship loan fund—the balance to be used only in extreme emergencies.

It was voted to accept recommendation of the Finance Committee for a raise in dues of $5 to $10 per annum.

The Finance Committee recommended, but no action was taken, that quarterly reports from the Treasurer be sent this committee; also, that the Finance Committee study the Publication Committee audit and that there be joint meetings of the two committees.

Changes in the constitution proposed by Dr. Edith Petrie Brown, chairman of the Committee on Constitution and By-Laws, will be published in the JOURNAL two months preceding the annual meeting and acted upon at the annual meeting.

Copies of the minutes will be sent to officers, chairmen of committees, regional directors, and branch presidents. Any one desiring copies, may have them upon request to the Executive Secretary, Miss Eunice Lisowska, 3B, 118 Riverside Drive, New York 24, N. Y.

GRACE TALBOTT, M.D.
Corresponding Secretary

ANNUAL MEETING
June 20-22, 1950

The annual meeting of the American Medical Women's Association will be held at the Del Monte Lodge, Carmel, California, on June 20-22, 1950, preceding the annual meeting of the American Medical Association, in San Francisco.

Space has been allotted for members of the American Medical Women's Association during the American Medical Association and the specialty meetings, at the Alexander Hamilton Hotel, 631 O'Farrell Street, San Francisco. Be sure to state you are a member of the American Medical Women's Association when making reservations.

WELCOME TO A NEW BRANCH

Branch 36 has just been established in Alameda County, California. This area takes in the cities of Oakland and Berkeley. The present officers are: President, Dr. Miriam Rutherford, 2929 Summit Street, Oakland, California; Secretary-Treasurer, Dr. Dorothy McDonald, 2490 Channing Way, Berkeley, California.

NEW MEMBERS

Alabama

Juanita Bolton McDonald, M.D., Box 87, Andalusia, Alabama.

Arizona

Malvina T. Lemmle, M.D., 525 East Speedway, Tucson, Arizona.

Vivian Tappan, M.D., 2350 East Elm St., Tucson, Arizona.

California

Golda Fischer, M.D., 1654 University Ave., Berkeley, California.

Miriam H. Rutherford, M.D., 2929 Summit St., Oakland, California.

New York

Elizabeth Goodman, M.D., 37 West 70 St., New York 23, New York.

ASSOCIATE MEMBERS

Arizona

Alice Claudia Hoffman, M.D., Pima County Hospital, Tucson, Arizona.

Arkansas

Anna B. Connell, M.D., University Hospital, Little Rock, Arkansas.

Lucille M. Kellmer, M.D., University of Arkansas School of Medicine, Little Rock, Arkansas.

District of Columbia

Dorothy J. Gildea Cunnick, M.D., Central Dispensary and Emergency Hospital, Washington, D. C.

HELEN M. JOHNSON, M.D.
Chairman, Membership

NEW YORK CITY HEALTH DEPARTMENT

Employment opportunities in the New York City Health Department are available, from time to time, for physicians well grounded in pediatrics, or for licentiates in pediatrics who desire part-time employment in child health stations, newborn nursery inspections, and pre-school children. Selection of candidates will be based partly on the physician's interest and partly on his qualifications.

Applications may be received by writing to the Bureau of Personnel, Department of Health, 125 Worth Street, New York 13, New York. Interviews will be arranged following receipt of these applications.

PRACTICE AVAILABLE IN EL PASO

The 20-year practice of a woman physician, an alumna of Tulane University, has recently been terminated by her death. The practice, mostly with women and children, offers an opportunity to a competent woman doctor to fill an urgent need, and at the same time to benefit herself from a ready-made practice and a fine Texas climate. Anyone interested should communicate with N. S. Gardner, president, Empire Products Corporation, Box 179, El Paso, Texas.

NOMINATIONS FOR OFFICERS FOR 1950-1951

Please send your nominations for the following offices to the undersigned before April 1, 1950. The Constitution provides as follows: "Article III, Section I,—

"This (the nominating) committee shall receive names of one or more candidates for each office to be filled at the next election. The report of the Nominating Committee shall include the names of any active members who may be suggested as candidates for a particular office by five or more active members. All candidates must have consented to serve if elected. The list of nominees shall be sent to the Elections Committee at least two months before the Annual Meeting. If there be no nominations for any office, nominations from the floor are in order."

Please note also Section 2. "All candidates for election to any office in the Association must be Active Members in good standing."

Nominations for the following officers are in order: President-elect, First Vice-President, Second Vice-President, and four Regional Directors: New England, North Central, Northwest, Southwest. When submitting nominations, please also include biographical data regarding the candidates.

ADA CHREE REID, M.D., *Chairman*
118 Riverside Drive, New York 24, N.Y.

LEGISLATION

An important piece of legislation which provides for appointment of women doctors and specialists in the Medical Department of the Army has been passed by the House of Representatives, almost unnoticed by us. It now needs our help for passage through the Senate.

This bill which is supported by the Secretary of Defense and the Secretary of the Army will come up for consideration by the Senate. We owe our cooperation to those women who have served in the armed forces and who have requested us to support the bill.

Write, at once, to your senator and to the Honorable Millard E. Tydings, Chairman of the Armed Services Committee of the Senate, urging passage of H.R. 4384.

MARGARET NICHOLSON, M.D.
Chairman, Legislation

Opportunities for Women Physicians

GRANTS FOR CARDIOVASCULAR RESEARCH

THE STUDY OF CARDIOVASCULAR DISEASE has become of paramount importance to the medical profession. Because of the increasing number of people stricken with heart disease each year, grants have been made available by the American Heart Association and Life Insurance Medical Research Funds.

The American Heart Association will support grants-in-aid for research in cardiovascular functions or disease for periods ranging from one to five years. This is subject to annual review; the major emphasis of its program will be support of individuals of outstanding ability through fellowships and support of career investigators.

These grants are made by the Board of Directors on recommendation initiated by the Research Committee and approved by the Executive Committee of the Scientific Council of the American Heart Association. They are available to non-profit institutions possessing the requisite basic facilities for research and having on their staffs the necessary experienced investigators. Grants are made with the stipulation that they are to be used by a particular individual (or individuals) or the staff of the institution in the support of a specific program of research under his direction.

The sum granted may cover salaries under the responsible investigator, research associates or assistants; the cost of supplies; animals; special equipment; essential travel; and other necessary expenses. The total sum granted in one calendar year to a responsible investigator will not ordinarily exceed $10,000.

Forms for use in applying for grants may be obtained from the Medical Director of the American Heart Association. Applications may be submitted at any time to the Medical Director, American Heart Association, Inc., but must be post-marked not later than midnight, December 15th of the year preceding the academic year in which the grant is desired.

Life Insurance Medical Research Fund grants are made by the Board of Directors on recommendation of the Advisory Council. They, too, are available to non-profit institutions having the basic facilities and experienced investigators.

As a rule, the grants are made in aid of programs requiring between $1,000 and $20,000 in a year. The sum granted may cover the salaries of the assistants but the salary of the responsible investigator must be provided from other sources.

Grants are made so that the sum is available on July 1st. The periods provided for are one, two, or three years.

Postgraduate Research Fellowships are open to promising young investigators with M.D. or Ph.D. degrees, for further training in research; and Student Research Fellowships are open to promising students of medicine or the medical sciences, for training in research.

Application and nomination forms may be secured from The Scientific Director, Life Insurance Medical Research Fund.

NEED FOR U.S. PHYSICIANS IN OCCUPIED ZONES

There is a desperate need for American medical officers in Europe in occupied zones to provide medical care for American military and civilian personnel and their dependents. Due to the withdrawal of medical officers whose periods of active duty in occupied Germany ended in the Spring of 1949, it has become necessary to employ German and Austrian medical personnel. This has been proven unsatisfactory for many reasons: Most German trained doctors lack adequate medical training; medical standards are much lower than ours; language difficulties have been troublesome; there has been resentment on the part of American patients, etc.

There have been several appeals by the Secretary of Defense, for young American physicians and dentists trained at government expense under wartime ASTP and V-12 programs to serve in occupied zones on a limited tour of military duty. The response has unfortunately been most disappointing.

There is a real need for ASTP and V-12 trained American physicians for military service in Germany and Austria.

OCCO ELAIN GOODWIN, M.D.
Chairman, Opportunities

News of Women in Medicine

SOPHIE RABINOFF, M.D., Senior Health Officer in East Harlem Health District of the Department of Health, City of New York, has been appointed Associate in Public Health at the New York Medical College Flower and Fifth Avenue Hospitals.

The Industrial Hygiene Newsletter reports the inauguration of an Occupational Medical Clinic at the Massachusetts General Hospital. HARRIET L. HARDY, M.D., is in charge of this clinic. "This research project has as its aims the improved diagnosis of occupational disease, discovery of previously unrecognized syndromes of toxic origin, and the development of better methods of treatment of occupational disorders."

ELENA D. GALL, M.D., Professor of Education at Hunter College, has been named Director of Adult Education at the Goldwater Memorial Hospital on Welfare Island, N. Y. This is thought to be a helpful new procedure for the rehabilitation of the chronically ill.

The American Academy of Pediatrics, meeting November 14-17 in San Francisco, included on its program a paper entitled "The Disparity Between Clinical Behavior and Histologic Appearance of Cutaneous Tumors of Childhood" by SOPHIE SPITZ, M.D., of New York.

The New York Medical College Flower and Fifth Avenue Hospitals announces the appointment of HELEN M. WALLACE, M.D., as Assistant Clinical Professor.

JEANNE MARCOUX was the recipient of the Walter Reed Memorial Medal presented annually by Tulane University for the outstanding paper on tropical medicine written by a student.

DOROTHY VINTON, M.D., has been elected an Alumni Regent to the Board of Reed College in Portland, Oregon.

MARY P. CONNOLLY, M.D., School of Public Health, University of Michigan, has been elected Vice-president of the American Public Health Association.

At the Southern Medical Association meeting November 14-17 at Cincinnati, Ohio, PHYLLIS EMMALINE JONES, M.D., Oklahoma City, Oklahoma, read a paper entitled "Panniculitis with Report of Cases." EVA F. DODGE, M.D., Little Rock, Arkansas, presented a paper on "The Young Primigravida." "Progress in Reduction of Infant Mortality and the Tasks Ahead" was the title of a paper given by LEONA BAUMGARTNER, M.D., and ELEANOR P. HUNT, M.D.

The Women Physicians of the Southern Medical Association enjoyed their annual dinner meeting November 15 at the Netherland Plaza Hotel in Cincinnati. HELEN GLADYS KAIN, M.D., Washington, D. C., Chairman of the group, presided. AMEY CHAPPELL, M.D., Atlanta, Georgia, spoke on "The Obligations of a Medical Woman." DOROTHY B. WORCESTER, M.D., Covington, Kentucky; EMILY R. HESS, M.D., Fort Thomas, Kentucky; and VIRGINIA KRATZ, M.D., Independence, Kentucky, were the committee in charge of arrangements. Dr. Worcester was elected Chairman for the 1950 meeting.

DR. MILDRED G. GREGORY has been made medican director of Babies' Hospital—Cait Memorial, New York City. She is the first woman to hold this position since the hospital was opened in 1894. She is a native of Newark, N. J. After graduating from the College for Physicians and Surgeons of Columbia University, she interned at Newark City Hospital and later served as resident in St. Mary's Hospital for Children in Manhattan. She entered practice in 1931.

The Yale University School of Nursing and the Connecticut State Department of Health conducted an Institute on Maternity Nursing in early December. Among those participating in the institute was DR. MARTHA CLIFFORD of the Bureau of Maternal and Child Hygiene, Connecticut State Department of Health.

The E. M. Howard Medal for distinguished medical service was presented to DR. ADDIE M. LYON, Commissioner of State Welfare in Kentucky at a public meeting during the Kentucky State Medical Association annual meeting.

DR. FRANCES HELLEBRANDT, Richmond, Virginia has been named President-elect of The American Society of Physical Medicine.

DR. DOROTHY W. BARUCH is the author of a pamphlet, "How to Discipline Your Children," published by the Public Affairs Committee, Inc. She says real love for a child means "having good feelings inside ourselves about him and learning to know him as an individual."

The New England Postgraduate Assembly held its eighth annual meeting in Boston during November. Among the guest speakers was DR. ESTHER L. RICHARDS of Baltimore. Her subject was "Emotional Problems and Behavior in Childhood."

Two Puerto Rican sisters, Dr. Maria Castro and Dr. Carman Castro, were included in the 1949 graduating class of the New York Medical College. Both are interning at Puerto Rican hospitals. They have two sisters who are already practicing physicians.

The Playtex Park Research Institute which will sponsor medical research in pediatrics had its first meeting at the Waldorf-Astoria Hotel in New York in mid-September. Sixteen leaders in pediatrics from institutions and agencies throughout the country make up the governing board. Included in this group are Dr. Katherine Bain, Director of Research and Child Development, United States Children's Bureau, Washington, and Dr. Eva Landsberg, Chief, Division for Physically Handicapped Children, New York City Department of Health. Dr. Bain presided at the meeting.

The United States National Commission of the United Nations Educational, Scientific, and Cultural Organizations is made up of one hundred leaders. At the Seventh Session in Washington during September, Dr. K. Frances Scott was named to represent the National Federation of Business and Professional Women's Clubs for the next three years. Emphasis during the coming year will be on human rights, food, and people, educational reconstruction, improvement of teaching materials, and education about the United Nations.

Dr. Leona Baumgartner, Children's Bureau, Federal Security Agency, is a member of the Mental Health Film Board. Dr. George Stevenson, president of the American Psychiatric Association in announcing the new program said it is designed to give the public authoritative films dealing with psychiatry and related subjects.

Two national organizations concerned with public health accorded high honor to Dr. Frances C. Rothert, Director of the Division of Maternal and Child Health of the Arkansas State Board of Health, at their annual meetings in New York last week. She was made President-elect of the National Association of Maternal and Child Health and Crippled Children's Directors and Vice-Chairman of the section on maternal and child health of the American Public Health Association. The latter office places her on the governing council of the A. P. H. A. This association now has an all time high of 12,000 members.

BERTHA VAN HOOSEN, M.D.

At the Convocation held in Atlantic City on November 11, 1949, by unanimous decision the Board of Trustees of the International College of Surgeons conferred upon Bertha Van Hoosen, M.D., Hon.M.A., L.L.D., F.A.C.S., F.I.C.A., the degree of Honorary Fellow of the International College of Surgeons, in recognition and appreciation of her splendid contributions to the Art and Science of Surgery.

Dr. Alice Chenoweth Pate and her husband, Dr. John Pate, are both connected with the Kentucky Board of Public Health.

Dr. Anna Weizmann, former Senior research worker at the Daniel Ziff Research Institute at Rehovoth, Palestine, since 1933, is a research associate in the Ipabett High Pressure Laboratory at Northwestern University.

Amey Chappel, M.D.,*
News Editor

***Please send your news notes to Dr. Amey Chappell, 795 Peachtree St., Atlanta, Georgia.**

MEDICAL SCHOOL NEWS

University of Arkansas School of Medicine

University of Arkansas has enrolled 320 students in the Medical School, of whom 11 are women. Dr. Alice Gamble, instructor in Pediatrics, appeared on the program of the fall postgraduate course sponsored by Pediatric Department, University School of Medicine and the Maternal and Child Health Bureau of the Arkansas State Board of Health . . . Dr. Eva F. Dodge, Associate Professor of Obstetrics-Gynecology, was one of eight women to receive their fellowship in the American College of Surgery in Chicago, October 19, 1949. . . . Dr. Lucille Kellmer, graduate of University of Oregon, School of Medicine, has been appointed assistant resident in Pathology for 1949-1950. . . . Dr. Agnes Connell, graduate of Baylor University School of Medicine, is an intern at the University Hospital.

Baylor University College of Medicine

Two women graduates, Dr. Jean P. Newton and Dr. Joana M. Rosenblad, are interning at the Methodist Hospital. . . . Dr. Alice McCullough is a resident in Pediatrics at the Hermann Hospital. . . . The University has been appointed by the Board of Directors of the Harris Co. Charity Hospital (Jefferson Davis Hospital) to approve staff appointments and to select the house staff. This hospital and the Methodist Hospital are used for teaching of students. Baylor University Medical College has an enrollment of 400 students, with 20 women students.

Cornell University Medical College

Dr. Janet Travell of the Department of Pharmacology gave two lectures at the Winter General Hospital, Topeka, Kansas, under the sponsorship of the veterans administration. The lectures were given on October 12 and 13, and were entitled: (1) Relation of somatic trigger areas to cardiac and other types of chest and arm pain. (2) Relation of somatic trigger areas to the patterns of hysteria.

University of Georgia

The University of Georgia reports nine women in the Medical School in Atlanta.

University of Illinois

The Neurologic Service at the Illinois Neuropathic Institute has opened a children's ward to accommodate twelve children under twelve years of age. Previously the Pediatric Service had provided beds for a limited number of children under the supervision of the Neurologic Service. . . . Miss Charlotte R. Robertson, a junior medical student at the University of Illinois, has been awarded the Jessie Horton Koessler Fellowship of the Institute of Medicine of Chicago. The fellowship, designed to aid research in biochemistry, physiology, bacteriology, or pathology, consists of a $500 annual stipend with the possibility of renewal for one or two years. Miss Robertson will use the fellowship to conduct a study of the loss of sensitivity of stimulation by drugs manifested by denervated sweat glands.

Tulane University

Sara Mayo Hospital, New Orleans, has developed a program of residency training in obstetrics and gynecology for women. The program is under the guidance of the Tulane Graduate School of Medicine and covers a three year period.

Northwestern University

Women were first admitted to Northwestern University in 1926. One hundred have received their degrees as Doctors of Medicine. Twenty percent of the women applying this fall were admitted while only twelve percent of the men applying were admitted.

Ruth B. Geyer, third-year student, has been awarded the $100 Berkelhamer Scholarship for 1949-50.

Dr. Betty Kizer is interning in the Naval Reserve at the University of Illinois Hospital.

Dr. Shirley Peterson is interning in the Naval Reserve at St. Francis Hospital, Evanston.

Harvard University

Dr. Shirley M. Gallup, Dr. Doris R. Bermel, Dr. Martha K. Caires, and Dr. Edith L. Stone graduated from the Medical School in June, 1949. They are the first women to receive medical degrees from this University.

* * *

If the section on Medical School News is omitted, it is because the "Medical School News" folder is as empty as Mother Hubbard's Cupboard. This particular "cupboard" can only be replenished by individual reporters who are in the cities where our medical schools are located.

Only eight women physicians have signified their willingness to collect news items. If you can find the time to act as reporter for the medical school in your city, will you write a card to the editor signifying your willingness? Or better still, send in any items you may now have at hand.

EVA F. DODGE, M.D.
Medical School News Editor

Please send your Medical School News Notes to Dr. Eva F. Dodge, University of Arkansas Medical School, Little Rock, Arkansas.

THE TIME HAS COME, THE EDITOR SAID, TO TALK OF MANY THINGS, OF NEWS AND NOTES AND ADDRESSES, AND VARIOUS TROUBLE-INGS

DURING THE PAST FEW MONTHS the machinery necessary for production of the JOURNAL has been gradually shifted from Texas and Tennessee to New York. Strikes, railway and air express delays, and other obstacles have interfered with smooth production. While on many accounts the changes are to be regretted they are truly inevitable.

Unfortunately—very unfortunately—these shiftings mean that the JOURNAL loses the help of Frances Mercer, whom the editors and the members of the Publication Committe have come to respect and to admire. We cannot praise too highly the quality of the services she has rendered. She officiated at the birth of the JOURNAL and supported it through its first halting steps. She established the typographical style and make-up, procured the advertising, and attended to the hundred and one details which are necessary to the production and distribution of a publication. The AMWA owes a great debt to Mrs. Mercer for her management of the JOURNAL through those early precarious days. The functions she so well performed are now being transeferred to the Journal Workship, Suite 3B, 118 Riverside Drive, New York 24, N. Y.

Printing and mailing of the JOURNAL will still be done at the Benson Printing Company in Nashville, Tennessee, as it has been from the first. Since the JOURNAL is mailed to all parts of the United States (and to 40 or more foreign countries), it is advisable to have a central mailing point, and the Benson Company has always been most helpful.

Correspondence in connection with any phase of space advertising is carried on with our advertising representative, Gladys Huss, at 420 Lexington Avenue, New York 17, N. Y. Correspondence of any other description, such as that regarding editorial matter, subscriptions, business, changes of address, and classified ads, should be directed to JAMWA, Suite 3B, 118 Riverside Drive, New York 24, N.Y. The address of AMWA headquarters, 30 Rockefeller Plaza, is used solely for purposes of registration. All files and records are kept at the Journal Workshop, Suite 3B, 118 Riverside Drive, New York 24, N. Y.

News notes are to be sent to the News Editor, Dr. Amey Chappell, 795 Peachtree Street, N.E., Atlanta, Georgia. If you have news, Dr. Chappell will be happy to receive it.

Reports or official announcements from any member or any committee or any branch of AMWA must be approved by the President and/or Secretary before they can be accepted for publication in the JOURNAL. Whereas the Editor has authority to edit any and all copy submitted to the JOURNAL for publication, there has been some question as to her authority to edit official reports. For that reason all reports and announcements will be printed as they are received from the President's office. Although it may be necessary to change the form of the report in order to comply with space and printing requirements, there will be no alteration in content.

Changes of address should be reported immediately to the Journal Workshop, giving the old as well as the new address. As it takes several weeks for a change to become effective, please bear with us and do not expect immediate service.

Departmental editors will use their own addresses in correspondence; letters addressed to them at the Journal Workshop will be forwarded. Remember the address: JAMWA, Suite 3B, 118 Riverside Drive, New York 24, New York.

—A.C.R.

* * *

THE PROBLEM CLINIC

The following problem has been presented for discussion by a fourth year medical student who is apparently getting prepared for her internship: "What constitutes a good intern?" Attending physicians and senior residents are urged to send their concept of a good intern to the Editor, JAMWA, Suite 3B, 118 Riverside Drive, New York 24, N. Y.

* * *

ALUMNAE OF N.Y. INFIRMARY ATTENTION, PLEASE

If you will communicate with the undersigned, you will receive news of great interest.

Ada Chree Reid, M.D., 118 Riverside Drive, New York 24, N. Y.

1950 INTERNATIONAL CONGRESS OF RADIOLOGY

The International Congress of Radiology will be held in London July 24-29, 1950. British women radiologists extend to friends in North and South America a most cordial invitation to attend. This meeting, coming as it does after ten years during which international friendship has been interrupted, will give a wonderful opportunity to meet old friends and make new ones on the basis of common interest in a rapidly developing specialty.

The scientific side of the Congress will include a full program of papers, and there will be Sections for Radio-diagnosis, Radio-therapy, Radio-physics and Radio-biology, and also for Medical Electrology.

The social side offers splendid opportunities to see all that is best in London: historical buildings, picture galleries, museums, parks and gardens, shops and factories. In the evenings there will be a ball at the famous Savoy Hotel and a gala performance at Convent Garden. After the Congress, there will be pleasure tours in the country and, for those who wish to see something of the work done here, there will be visits to London hospitals, and to the best known provincial centers.

It is hoped that, during Congress week, there will be a special afternoon reception to medical women attending the Congress, and those who intend to make the journey are asked to write their friends here, who will wish to offer some hospitality.

Women radiologists should already have received the preliminary program, but everyone who is interested and is not a member of a radiological society should write for the booklet and ask the appropriate society to sponsor an application for Congress membership. The official address of the Congress is 45 Lincoln's Inn Fields, London W.C. 2, England.

MARGARET C. TOD, M.D.

FREE TRIP TO SWITZERLAND

The American Society for Friendship with Switzerland, Inc., challenges women interested in international relations to compete for the wonderful opportunity to visit Switzerland, become acquainted with the women of another great democracy, and exchange opinions and experiences. It offers a 2 to 3 weeks' visit in Switzerland to the three women best qualified to represent (1) American business and professional women; (2) women of the farming or rural communities; and (3) housewives. The three chosen delegates will leave New York around the middle of September, 1950. Terms of the competition may be obtained by writing Mrs. Oscar Ziegler, Executive Secretary, American Society for Friendship with Switzerland, Inc., 8 West 40th Street, New York 18, New York. In requesting information, enclose a self-addressed stamped envelope.

* * *

To further educational interchange, the American Society for Friendship with Switzerland, Inc., provides, through the Institute of International Education, fellowships to American graduates for study in Switzerland, and to Swiss graduates for study in the United States.

WHO FELLOWSHIPS

The World Health Organization is offering nine to twelve fellowships—available in 1950—for foreign study in the field of health. Grants will be made for periods of two to three months for observation, and up to twelve months for study. WHO provides all transportation, in addition to a stipend of $200 per month for those studying in one place and $300 for those moving about. Application blanks—which must be filed in triplicate by March 1, 1950—may be obtained from the Educational Program Branch, Office of International Health Relations, United States Public Health Service, Washington, D. C.

STERILITY AWARD

The American Society for the Study of Sterility is offering an annual award of $1,000 known as the Ortho Award for an essay on the result of some clinical or laboratory research pertinent to the field of sterility. Competition is open to those who are in clinical practice as well as to individuals whose work is restricted to research in basic fields or full time teaching positions. The prize essay will appear on the program of the forthcoming meeting of the American Society for the Study of Sterility, which is to be held at the Sir Francis Drake Hotel in San Francisco, June 24 and 25, 1950. Full particulars may be obtained from the secretary, Dr. Walter W. Williams, 20 Magnolia Terrace, Springfield, Massachusetts. Essays must be in his hands by April 1, 1950.

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Journal of
The American Medical Women's Association
Suite 3B, 118 Riverside Drive
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